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Attorney for Appellant(s)

PATENT

UNUS #: Y2-X380-GR
CASE #: J6638(C)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Customer No.:	000201
Appellants:	Shana'a et al.
Serial No.:	09/930,320
Filed:	August 15, 2001
For:	A SYSTEM FOR CUSTOMIZING PERSONAL CARE PRODUCTS

Group: 1617
Examiner: S. Wang
Edgewater, New Jersey 07020
February 9, 2004

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APPEAL BRIEF

TABLE OF CONTENTS

Section **Page**

I. REAL PARTY IN INTEREST

The real party in interest is Unilever Home and Personal Care USA, division of CONOPCO, Inc., a corporation organized and existing under and by virtue of the laws of the State of New York and having its principal place of business at 33 Benedict Place, Greenwich, Connecticut 06830.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

The application was originally filed with claims 1 to 29. Claims 1-11 and 13-29 remain in the case and are the subject of this appeal. The claims on appeal are included in the Appendix.

IV. STATUS OF AMENDMENTS

A response was filed on October 21, 2003 to the Final Rejection but it did not involve amendment to the specification or the claims. Only claims 1 and 26-28 were amended during prosecution.

V. SUMMARY OF THE INVENTION

The invention relates to the general area and art of the customized formulation of personal care products. Personal care products are widely available, however, a drawback of such products is that the user cannot alter the formulation to accommodate their particular skin and hair characteristics, personal preferences, or to provide specialized treatment for skin and hair conditions. A further drawback of such personal care products is the uncertainty of the age and freshness of the prepared formulations which may have been prepared many months or years before the product is sold.

Therefore, one aspect of the invention is to provide a method for providing a customized personal care product to a consumer at a location remote from the location in which a personal care product base composition was prepared. The customized product produced by the inventive method will have the following two components: 1) a product base (e.g. body wash base, hair shampoo base, skin toner base, etc.) selected by the consumer; and 2) at least two separate classes of performance agents (e.g. fragrance, emollient, botanical extracts, other skin actives for treating skin conditions, etc.) also selected by the consumer. The base and the at least two performance agents are combined to form a finished personal care product. Product base compositions are defined in the specification on page 4, line 30 through page 5, line 10. Product base compositions may include a thickener. See, e.g., page 5, line 22 - 25.

The separate choices within each performance agent class available to the consumer are called "variants". So in the case of the fragrance performance agent, one variant will be e.g. fragrance #1 and a second variant will be a different fragrance, e.g. fragrance #2 as illustrated in Table 1A on page 10 of the instant specification. A second performance agent called a "Benefit" agent is also illustrated in Table 1A. A further limitation of the inventive method is that the first and second class of performance agents are independently selected from specific defined classes of materials limited to fragrances, colorants, benefit agents or blends thereof that are defined in the specification on page 2, lines 11-16, page 6, line 11 and line 29.

Each of the performance agents is dissolved in a "vehicle". A further requirement according to the claims is that all of the vehicles for each separate class of performance agent have at least two ingredients in common with each other. This is also illustrated in Table 1A. A further requirement for the inventive method as claimed is that the first vehicle is compatible with both the personal care base composition and the second class of performance agents.

The inventive method further provides that the consumer may select in any sequence one personal care base composition and at least one variant from the first class of performance agents and at least one variant from the second class of performance agents. These ingredients are then dosed into a container to form a personal care product and the product is blended until uniform.

The claims to the subject invention as presently in the case clearly set forth and define a method for selecting a customized personal care product as opposed to prior art customizable products. This is borne out when one reviews the independent claim 1 in the application, wherein it is specifically recited that the method concerns itself only with a personal care product base that is prepared at a location that is remote from the location that the customized product is prepared, and that performance agents must have certain specific defined properties.

VI. ISSUES FOR APPEAL

A. Claims 1-11, 13-22, and 25-29 are rejected under 35 USC § 103(a) as being unpatentable over Rath et al. (USP 5,972,322), in view of Rigg et al. (USP 5,622,692), and Stewart (WO 98/30189).

B. Claims 23 and 24 are rejected under 35 USC § 103(a) as being unpatentable over Rath et al. (USP 5,972,322), in view of Rigg et al. (USP 5,622,692), and Stewart (WO 98/30189) and in further view of Tartaglione (USP 4,851,062).

VII. GROUPING OF CLAIMS

For purposes of this Appeal the claims should stand together as one group.

VIII. APPELLANTS' ARGUMENTS

A. The examiner's rejection of claims 1 - 11 and 25 - 29 under 35 U.S.C. 103(a) as being unpatentable over Rath et al. (US 5,972,322 of record), (US'322) in view of Rigg et al. (US 5,622,692 of record) (US'692) and Stewart (WO/98/30189) for reasons set forth in the prior office action should be reversed.

Rath et al. relates to a system for combining disparate and separate components to form a customized hair care formulation where the thickener is separate from the product base and is separately added after other enhancing agent ingredients have been added (see, e.g., column 1, lines 33-40, 51-55 and line 65 to column 2, line 1). Rath et al. describes in all cases a low viscosity base which can be selected, a second package containing a compatible thickening composition, and where a wide variety of enhancing additives may be added. Rath et al. teaches away from the present invention where the inventive base composition (where appropriate) already comprises a thickening agent (see page 5, lines 21-25) and was formulated at a location remote from the location that the finished personal care product is prepared in.

Moreover, amended claim 1 makes clear that the first and second class of performance agents are independently and specifically selected from fragrances, colorants, benefit agents, and blends thereof (see instant specification page 2, lines 12-16, 21). Such performance agents can not be thickening agents since thickening agents are separately defined as being part of a base composition (see page 4, line 30 to page 5, line 10) and as stated above must be added to the base composition at a location that is different than where the performance agents are added.

Furthermore, Rath et al. describes that the hair care system which includes a base, a thickener and separate enhancing additives are pre-packaged in the form of a kit (see col. 13, lines 24-27). By specifying multi-part product kits, Rath et al. teaches clearly that each of the component parts of the kit should be pre-selected by a person other than the consumer, i.e. the kit supplier. The consumer is not intended to be involved in the packaging of the kits disclosed in Rath et al., but only in the possible mixing of certain kit components. In contrast, in the present invention, the consumer selects, in any sequence, at least one personal care base composition, at least one variant from the first class of performance agents, and at least one variant from the second class of performance agents. Thus, in the present invention, the component parts of the product are not dictated by a pre-packaged kit selected according to the desire or whim of an unspecified person but by the precise needs of the consumer. The choice of components in the kits of Rath et al. will be limited, and as a result, the consumer may not be able to obtain the precise combination of components which they would like to have (see page 1, lines 22-28 in the instant specification).

The Examiner asserts that one cannot show non-obviousness by attacking references individually where the rejections are based on combinations of references with respect to applicants' previous arguments. However, it is well settled that the Examiner cannot pick and choose among individual elements of assorted prior art references to re-create the claimed invention based on the hindsight of the applicants' invention. Rather, the Examiner has the burden to show some teaching or suggestion in the references to support their use in the particular claim combination. See Smith

Klein Diagnostics Inc. v. Helena Laboratories Corp., 8 USPQ 2d 1468 (Fed.Cir. 1985). Additionally, the mere fact that it is possible to find isolated disclosures which might be combined in such a way as to produce a new system, does not necessarily render such a system obvious unless the art also contains something to suggest the desirability of the proposed combination, i.e. the motivation to combine the references. In re Grabiak, 226 USPQ 870, 872 (Fed.Cir. 1985).

The Examiner states that whether a thickener should be a base (common) ingredient or variable is a matter that is within the skill of the artisan which would be obvious depending on the type of products and the population of customers. The Examiner cites the instant specification that states "the viscosity of the product base can be varied from pourable liquid to thick paste or extrudable depending on its composition and the amount of thickener added to the base". Applicants respectfully submit that this definition of the variability of viscosity of the product base has no effect on the definition of performance agents, which are separately defined in the instant specification as described above. Absent impermissible hindsight, the skilled artisan would find no teaching in Rath et al. that a thickener is equivalent to a performance agent. In fact, the instant specification makes clear that the two materials are very different and provides specific examples to elaborate on the differences as discussed above.

The Examiner asserts that there is no clear definition of the "benefit agent" which would exclude a thickener. Applicants respectfully disagree with the Examiner. The terms "variants" are used to designate individual performance agents in the instant specification. "Variants as used herein are defined as distinct members of a single class of performance agent which may be selected from such classes as botanical extracts, emollients, vegetable oils, active agents for treating or preventing skin disorders, vitamins, and the like." (See page 2, lines 11-16) fragrances (page 6, line 11) and colorants (page 6, line 29). As stated above, thickeners are separately defined as being a part of the base composition (see page 5, lines 21-25). Since applicants may be their own lexicographer, and the Federal Circuit has held that "when a patent

applicant has elected to be a lexicographer by providing an explicit definition in the specification for a claim term, the definition selected by the patent applicant controls". Renishaw PLC v. Marposs Societa'Per Azioni, 48 USPQ 2d 1117 (Fed. Cir. 1998).

Applicants therefore respectfully assert that since the definition of performance agent explicitly excludes a thickener, the Examiner cannot read in to performance agents the thickeners of Rath et al. To emphasise the distinction between a base composition and a performance agent or a variant of a performance agent as discussed above, applicants specifically describe a product base that is prepared at a location remote from a second location in which a personal care product based composition is prepared. (See page 2, lines 3-5). Furthermore "the consumer is allowed to select in any sequence one personal care base composition and at least two variants from separate classes of performance agents..." (see page 2, lines 18-21). In this description of applicants' invention, applicants make clear that the components of a base including the thickener (see page 5, lines 22-24) is not the same as a performance agent.

This is contrary to the Examiner's assertion that "benefit agents herein include anything useful in the composition, from solvent to preservatives". Applicants specifically define further a base composition as comprising a variety of ingredients including solvents, thickening agents, lathering aids, emollients, pH adjusters, and preservatives (see page 4, line 30 to page 5, line 10). The only type of component that can be classified as both a base component and/or a performance agent is an emollient as specifically defined in the instant specification. This means that an emollient can be a component of a base composition (i.e., a base component) and it can also be a variant of a performance agent. Outside of this one exception, no other "base component" is defined as a "performance agent." This is clearly contrary to the Examiner's assertion that "benefit agents herein include anything useful in the composition, from solvent to preservative".

Applicants further note the Examiner's assertion that the color concentrates of Rath et al. have at least five ingredients in common. This feature does not, however, render obvious the claimed method in its entirety since other essential features of the inventive method are not disclosed or suggested by Rath et al. as described above.

B. The examiner's rejection of claims 23 and 24 under 35 U.S.C. 103(a) as being unpatentable over Rath et al. (US 5,972,322 of record), in view of Rigg et al. (US 5,622,692 of record) and Stewart (WO 98/30189), and in further view of Tartaglione (US 4,851,062 of record), for reasons set forth in the prior office action should be reversed.

Stewart teaches a computer controlled device for evaluating consumer test results and preferences (page 16, lines 10-20). The system includes a base composition and one or more additives that are added to the base (page 22, lines 4-6). Stewart discusses what the principal components of the additives are (page 23, lines 2-6) but is silent about how each additive relates to the other with respect to any ingredients that may be in common with each other. Stewart merely states that additives will typically be dissolved in a solvent, such as water, alcohol, or an oil (page 22, lines 18-19). See also Examples 1-10 on pages 26-32 which discuss all the additional ingredients that can be added to the indicated cosmetic bases but are silent on how the ingredients in each additive relate to each other. Therefore, Stewart does not disclose or suggest the vehicle of each additive have at least two ingredients in common.

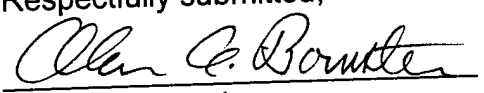
Rigg et al. discloses the method and apparatus for customizing facial foundation products. As in Stewart, Rigg et al. discloses a wide range of additives that may be added to a particular formulation (see col. 2, line 61-62). As in both Rath et al. and Stewart, there is no disclosure or suggestion regarding how the various additives relate to each other with respect to ingredients in each additive that may be in common with each other. Therefore Rigg et al. does not disclose or suggest the vehicle of each additive have at least two ingredients in common.

Tartaglione discloses a method of making a plastic container having a neck. Tartaglione does not disclose how personal care products can be custom formulated nor the relationship of the ingredients that are required by the inventive method of custom formulating such products. Therefore there would be no motivation to one skilled in the art to combine Rath et al. in view of Rigg et al. and Stewart, and in further view of Tartaglione to obtain the invention of claims 23 and 24 absent impermissible hindsight.

IX. CONCLUSION

In conclusion, the method of the present invention constitutes an improvement in the art. It is distinguished by its claims over the art. It is novel and unobvious. Claims 1-11 and 13-29 should be allowed. Appellants respectfully request the Board of Patent Appeals and Interferences to reverse the Examiner's final rejections under 35 USC § 103(a).

Respectfully submitted,



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X. APPENDIX

The claims on appeal are as follows:

1. (Amended) A method for providing a customized, personal care product to a consumer at a location remote from a second location in which a personal care product base composition is prepared, comprising:

(a) providing a selection from a plurality of said personal care base compositions;

(b) providing a selection from a plurality of variants from a first class of performance agents, each of said variants being delivered in a first vehicle, said first vehicle for each of said variants having at least two ingredients in common with each other, said first vehicle being compatible with a mixture of said personal care base composition and a second class of performance agents different from the first class;

(c) providing a selection from a plurality of variants of said second class of a performance agents, each of said variants being delivered in a second vehicle, said second vehicle for each of said variants having at least two ingredients in common with each other;

(d) permitting the consumer to select, in any sequence, said at least one personal care base composition; at least one variant from said first class of performance agents; and at least one variant from said second class of performance agents;

(e) dosing, in a predetermined sequence, the consumer selected personal care base composition and performance agents into a container to form a personal care product;

(f) mixing said personal care product until the product is uniform; wherein said first and second class of performance agents are independently selected from fragrances, colorants, benefit agents and blends thereof.

2. The method of claim 1 wherein said second vehicle for each variant has at least three ingredients in common.

3. The method of claim 1 wherein a sufficient quantity of a blank composition is dosed in said container, in substitution for at least one performance agent, whereby the final concentration of base product ingredients in said personal care composition is adjusted to be substantially equal to that of a final product where no substitution of said performance agents was made.

4. The method of claim 3 wherein said blank composition has at least two ingredients in common with any one of said performance agents.

5. The method of claim 1 wherein said customized personal care product is selected from a body wash, a body lotion a body mist spray, a hydroalcoholic toner, a facial cleansing gel, a hand cleanser, a hair shampoo, a hair conditioner, a face lotion, a deodorant, a bar soap, a bath foam, and bath salts.

6. The method of claim 1 wherein a customized label is applied to the container identifying the product and only the components of the base formula and dosed performance agents contained therein.

7. The method of claim 1 wherein said first class of performance agents are fragrances.

8. The method of claim 7 wherein each of said fragrances contain a solvent and at least one preservative in common with each other.

9. The method of claim 8 wherein said solvent is selected from water, a monohydric alcohol, a polyhydric alcohol, or a blend thereof.

10. The method of claim 8 wherein said preservatives are selected from DMDM Hydantoin, Iodopropynyl Butylcarbamate, polyaminocarboxylic acid chelates or salts thereof, and phosphonate chelates.

11. The method of claim 7 wherein at least one fragrance selection has a plurality of scent intensity levels selectable by the consumer.

12. (cancelled)

13. The method of claim 1 wherein said second class of performance agents are benefit agents.

14. The method of claim 13 wherein at least one benefit selection has a plurality of benefit intensity levels selectable by the consumer.

15. The method of claim 2 wherein said second vehicle's common ingredients include a solvent, a solubilizing agent, and a preservative.

16. The method of claim 14 wherein said solvent is selected from water, a monohydric alcohol, a polyhydric alcohol, or a blend thereof.

17. The method of claim 14 wherein said solubilizing agent is selected from at least one of a polyethylene glycol ether of a fatty alcohol, a polyethylene glycol ether of hydrogenated castor oil, a polyethylene glycol derivative of a sorbitan ester, propylene glycol, a polysorbate, a glycerol ester, a polyethylene glycol derivative of a glycerol ester, an alkyl phosphate and an alkyl sulfate.

18. The method of claim 14 wherein said preservatives are selected from DMDM Hydantoin, Iodopropynyl Butylcarbamate, polyaminocarboxylic chelates, and phosphonate chelates.

19. The method of claim 1, comprising dosing a third class of performance agent different from said first and second class of performance agent, said third class of performance agent having at least two ingredients in common with at least one of said first and second class of performance agents; said third class of performance agent

being compatible with said product base, and said first and second class of performance agents.

20. The method of claim 6 wherein the label contains a code capable of tracking the identity of both the product and the consumer for later reference.

21. The method of claim 20 wherein the code is in the form of a machine scannable bar code.

22. The method of claim 1 where said container has a volume under about 1 liter.

23. The method of claim 22 wherein said container has a neck; a plug is inserted in said container's neck after said container has been filled to a level below said neck; said plugged neck is then capped; said plug occupying at least 50% of the volume of said neck to improve mixing efficiency when said container's contents are blended by a mixing device while said container is situated in a position substantially inverted from its filling position.

24. The method of claim 22 wherein said container has a neck; a cap without an orifice is used to cap said container to improve mixing efficiency when said container's contents are blended by a mixing device while said container is situated in a position substantially inverted from its filling position.

25. The method of claim 1 wherein said container is agitated while its major axis is positioned at an angle greater than 10 degrees from the vertical.

26. (Amended) The method of claim 25 wherein said angle is greater than 30 degrees from the vertical.

27. (Amended) The method of claim 1 wherein said personal care product base has a viscosity in the range of about 0.9 to 100,000 cps at 25°C.

28. (Amended) The method of claim 1 wherein said product base's viscosity is in the range of about 0.9 to 30,000 cps at 25°C.

29. The method of claim 1 wherein said second location is a retail location.

XI. LIST OF AUTHORITIES

Smith Klein Diagnostics Inc. v. Helena Laboratories Corp., 8 USPQ 2d 1468 (Fed.Cir. 1985).

In re Grabiak, 226 USPQ 2d 870, 872 (Fed.Cir. 1985).

Renishaw PLC v. Marposs Societa'Per Azioni, 48 USPQ 2d 1117 (Fed. Cir. 1998).

As articulated in its discussion above, the Court believes that plaintiffs have established a likelihood of success on the merits. At the very least, however, plaintiffs have surely raised sufficiently serious questions going to the merits to make them a fair ground for litigation.

III. *Balance of Hardships*

The final element required for granting a preliminary injunction is a finding that the balance of hardships tips decidedly in favor of the party seeking the injunctive relief. Based on the affidavits and testimony, the Court concludes that this standard is met, in that the balance of hardships in this case tips decidedly in favor of New Line. Of significance to the Court's decision is that this month marks the premiere of Nightmare IV. This premiere is being accompanied by a massive advertising and promotional campaign, including the release of the Fat Boys video. Tr. at 13. It is in this month that many individuals will make their decision whether Nightmare IV is a film that they are interested in viewing. Thus, the telecast of the lower quality D.J. Jazzy Jeff video with the somewhat silly and less frightening Freddy could dissuade an unspecified number of individuals from seeing the film.

Moreover, the Court believes that Zomba will not be significantly harmed if they are forced to wait a few months before being able to release their music video. The Court has every intention of having this matter tried without significant delay and will place the parties on an expedited discovery and pretrial order track. Although Zomba might be financially better off if they were permitted to release the music video now and thereby obtain the benefits of New Line's massive promotional campaign, the Court believes that Zomba is not entitled to this benefit, particularly because it would result in unjust enrichment of Zomba at New Line's expense.

Finally, a failure to grant an injunction now will essentially be denying New Line ultimate relief, because once the D.J. Jazzy Jeff music video is released on MTV the injury to Nightmare IV and to the sale of "Are You Ready for Freddy?" will be irreparable. On the other hand, a slight delay in the release of the D.J. Jazzy Jeff music video will not result in significant harm to Zomba.

CONCLUSION

Inasmuch as New Line has adequately demonstrated irreparable injury, that the case presents sufficiently serious questions going to the merits to make them a fair ground for litigation, and that the balance of hardship is on its side, New Line's motion for a preliminary injunction is granted.[12] Zomba is enjoined from manufacturing, advertising, distributing, selling or releasing for public broadcast, telecast or other exhibition, the music video entitled "A Nightmare on My Street," performed by D.J. Jazzy Jeff, during the pendency of this action. The parties are directed to complete discovery by September 30, 1988 and file a joint pretrial order by October 21, 1988.

Settle preliminary injunction on notice.

Court of Appeals, Federal Circuit

Smithkline Diagnostics Inc. v. Helena Laboratories Corp.

Nos. 87-1532 and -1533

Decided October 12, 1988

PATENTS

1. Patent construction — Claims — Defining terms (§125.1305)

Claim limitation, for specimen test slide and method for detecting occult blood in fecal matter, specifying that catalyst of positive monitor is "a compound that reacts to environmental conditions in a manner similar to hemoglobin," must be read to include hemoglobin itself.

Broadcasting System, 503 F.Supp. 1137, 1146 [208 USPQ 580, 587] (S.D.N.Y. 1980), *aff'd*, 672 F.2d 1095 [215 USPQ 289] (2d Cir. 1982) (defendants were guilty of bad faith where plaintiffs denied permission to use copyrighted material because they were using it themselves and defendants used material anyway).

In addition, the Court believes that the fact that Zomba sought an opinion of counsel with respect to their Freddy does not necessarily indicate good faith because counsel was apparently not asked to consider the issue of whether the planned video or music infringed the Nightmare series but only whether the Freddy character (which Zomba apparently told the law firm was called "Teddy") was infringing.

[12] Having granted New Line's motion for a preliminary injunction under the copyright law, the Court need not consider New Line's arguments for an injunction under the Lanham Act.

2. Patentability/Validity — Obviousness — In general (§115.0901)

JUDICIAL PRACTICE AND PROCEDURE

Procedure — Judicial review — Standard of review — Patents (§410.4607.09)

Appellate review of federal district court's factual findings underlying its conclusion on obviousness is governed by clearly erroneous standard, although conclusion of obviousness or non-obviousness is reviewed as matter of law.

PATENTS

3. Patentability/Validity — Obviousness — Relevant prior art (§115.0903)

Patent infringement defendant which alleges invalidity due to obviousness cannot pick and choose among individual elements of assorted prior art references to recreate claimed invention, but rather must show some teaching or suggestion in references to support their use in particular claimed combination.

4. Patentability/Validity — Inventorship (§115.13)

35 USC 116, as amended in 1984, which authorizes joint inventorship even if named inventors did not jointly invent every claim, applies to patent even though patent was in litigation on date of statute's enactment and even though 35 USC 106(e) specifies that parties in cases pending on date of enactment shall have their rights determined on basis of "substantive law" in effect prior to date of enactment, since "all claims" rule, which requires inventorship entity to be true origin of every claim in patent, was not uniformly accepted as "substantive law" before 1984 amendments.

5. Infringement — Defenses — Estoppel (§120.1103)

Patent infringer that marketed slides for detecting occult blood in fecal matter with non-infringing lead acetate but that failed to alter package insert stating that slides contained hemoglobin, which is infringing, is not estopped from denying that slides contained hemoglobin, and thus cannot be said to have committed "infringement by estoppel," since admittedly non-infringing product cannot be converted by estoppel into infringing product.

6. Patentability/Validity — Fraud or inequitable conduct (§115.15)

Lack of any evidence of patentee's actual wrongful intent or gross negligence precludes finding of inequitable conduct, since such evidence, although it need not be direct but may be inferred from patentee's conduct, is required for finding of inequitable conduct.

Particular patents — Chemical — Specimen test slides

4,365,970, Lawrence and Townsley, specimen test slide for detecting hidden or invisible (occult) blood in fecal matter and thereby for early diagnosis of gastroentrological diseases including colorectal cancer, and method improvement of built-in verification controls, claims 1, 2, 4, and 5 valid, infringed as to defendant's product containing hemoglobin but not infringed as to defendant's product containing lead acetate.

Appeal from the U.S. District Court for the Eastern District of Texas, Fisher, J.

Patent infringement action brought by Smithkline Diagnostics Inc. against Helena Laboratories Corp. From federal district court ruling holding patent valid but not infringed, parties cross-appeal. Affirmed in part on modified grounds, reversed in part, and remanded.

Donald Dunner, of Finnegan, Henderson, Farabow, Garrett & Dunner, Washington, D.C. (Allen M. Sokal, Washington, D.C., on brief; Alan D. Lourie and Stuart R. Suter, Philadelphia, Pa., of counsel), for plaintiff-appellant.

Jerald I. Schneider, of Cullen, Sloman, Cantor, Grauer, Scott & Rutherford (Charles R. Rutherford, with them on brief), Detroit, Mich., for defendant/cross-appellant.

Before Nichols, senior circuit judge, and Rich and Nies, circuit judges.

Nies, J.

SmithKline Diagnostics, Inc. (SKD) appeals the final judgment of the United States District Court for the Eastern District of Texas, *SmithKline Diagnostics, Inc. v. Helena Laboratories Corp.*, 662 F.Supp. 622 (E.D. Tex. 1987), holding United States Patent No. 4,365,970 ('970) valid as between the parties but not infringed by either of two accused products of Helena Laboratories Corp. Based on its holding of noninfringement, the court dismissed SKD's complaint. SKD appeals the findings of noninfringement. In a cross appeal, Helena asserts that if the judgment of noninfringement is not affirmed, this court should re-

verse the judgment that the asserted claims are not invalid for obviousness. Helena also asserts error in that the court did not uphold other pleaded defenses or its counterclaim for unfair competition, matters on which the court made no explicit findings or conclusions.

We affirm the judgment of validity, but on different grounds from those stated by the district court. On the issue of infringement, we affirm the finding that Helena's product containing lead acetate does not infringe the asserted claims but reverse with respect to Helena's product containing hemoglobin. Helena has failed to persuade us that the record shows triable issues on the other matters raised in its cross appeal. Thus, we affirm-in-part on modified grounds, reverse-in-part, and remand for calculation of damages.

I
BACKGROUND

SKD owns the '970 patent, issued to two of its employees, Dr. Paul Lawrence and Charles Townsley, on December 28, 1982. The patent covers a specimen test slide and method for detecting occult (hidden or invisible) blood in fecal matter, an early symptom of a variety of gastroenterological diseases including colorectal cancer. More specifically, the test slide contains a piece of paper impregnated with a colorless compound, guaiac, which turns blue in the presence of a developing solution, such as hydrogen peroxide, and a catalyst, such as hemoglobin in the blood. Thus, a blue color indicates blood is present, a "positive" result; the absence of blue, a "negative" result, indicates the absence of blood. In practice, a patient places fecal samples on each of several designated test areas on the slide and returns the slide to his physician or a laboratory for testing. To test, a developing solution is place on the test areas, and the areas are observed for color. This much of the subject invention is in the prior art. *See* United States Patent No. 3,996,006 (issued to Pagano on Dec. 7, 1976).

It is important to verify that the guaiac paper and developing solution are working properly. If either the paper or solution has lost effectiveness, a false negative result may occur, failing to detect the presence of existent cancer. Conversely, if the paper or solution becomes contaminated, a false positive test may occur, causing patient anxiety and unnecessary clinical investigations. To ensure accuracy, separate materials (external controls) were sold which could be used to check that the paper and solution were actually working. The parties dispute whether external controls consisted only of a representative unused slide from a batch of slides or also included a slide having three test areas with only one area being used for the fecal smear, the others for testing performance of the product. There is no dispute, however, that in either case the control was not built into the slide.

The invention of the '970 patent improves on the Pagano test slide and separate verification controls by providing built-in positive and negative monitors separate from the test areas. The positive monitor contains (i.e., is printed with) a catalyst, which must be a compound that reacts to environmental conditions in a manner similar to hemoglobin. The negative monitor lacks the catalyst; thus, it consists of the guaiac-laden paper alone. In practice, developing solution is added to the two monitors after it is applied to the fecal test areas. A blue color on the positive monitor indicates that the paper and solution are working. The absence of blue on the negative monitor assures that the slide has avoided contamination.

SKD asserts that independent device claim 1, claims 2 and 4 which depend from claim 1, and independent method claim 5 of the '970 patent are infringed.[1] Claims 1 and 5, the only independent claims asserted, both contain the limitation that the catalyst of the positive monitor is "a compound that reacts to environmental conditions in a manner similar to hemoglobin." Whether that claim limitation, as properly interpreted, excludes hemoglobin itself is critical, as we shall see, to the issues of validity and infringement.

When the '970 patent issued in December of 1982, SKD was marketing a slide, under the trademark HEMOCCULT, which contained hemin as the catalyst. At that time, Helena had competitive slide products on the market, sold under its COLOSCREEN mark, which used hemoglobin as the catalyst in a positive test monitor. Later, in April of 1984, Helena changed to use of lead acetate rather than hemoglobin as the positive monitor's catalyst. Until November 1985, however, Helena continued to enclose literature in its slide packages stating that the positive monitor contained hemoglobin.

SKD asserted infringement of the '970 claims, both literally and under the doctrine of equivalents, by the Helena products containing hemoglobin. With respect to Helena's lead acetate product, SKD asserted that Helena should be estopped to deny that its product contains hemoglobin because it continued to indicate that the product contains hemoglobin after the change was made to lead acetate. SKD did not assert that the lead acetate product would be covered by the claims but for the misrepresentation.

Helena contended that its products containing hemoglobin do not infringe because the claim language "similar to hemoglobin" literally excludes hemoglobin itself, and that the prosecution history precludes interpreting the claim to cover a hemoglobin product. Helena also asserted that the '970 claims in issue are invalid as obvious within the meaning of 35 U.S.C. §103 (1982), and invalid under 35 U.S.C. §116 (1982) for failure to name the proper inventors. In addition, Helena asserted the defense of inequitable conduct and raised an unfair competition counterclaim.

The district court interpreted the claim limitation at issue as excluding hemoglobin itself. Based upon that interpretation, the court found the invention of the '970 patent nonobvious. Had the claims covered hemoglobin, however, the court stated that the claim would have been invalid as obvious over prior art disclosing hemoglobin as a catalyst in positive test monitors.

Under its interpretation of the claim limitation "similar to hemoglobin" recited in claims 1 and 5, the court found Helena's hemoglobin-containing slides noninfringing, either literally or under the doctrine of equivalents. It rejected SKD's estoppel argument with respect to Helena's products containing lead acetate. It further held that, if Helena were found to infringe, the infringement was not willful, an issue not appealed.

Neither in its judgment nor in its findings of fact and conclusions of law did the district court mention Helena's other defenses or its counterclaim for unfair competition. Both parties have appealed, each asserting error in certain findings and conclusions made adverse to them, and each raising various arguments concerning issues not explicitly ruled on by the court.

II
OPINION

A. *Claim Interpretation*

The claims of the '970 patent measure the invention at issue; thus, the claims must be interpreted and given the same meaning for purposes of both validity and infringement analyses. *See, e.g., SRI Int'l v. Matsushita Elec. Corp. of Am.*, 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed. Cir. 1985) (in banc). To ascertain the meaning of the claims, we look to the claim language, the specification, and the prosecution history. *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1579, 6 USPQ2d 1557, 1560 (Fed. Cir. 1988); *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 867, 228 USPQ 90, 93 (Fed. Cir. 1985). Also relevant are the other claims and expert testimony. *See, e.g., Perini America, Inc. v. Paper Converting Mach. Co.*, 832 F.2d 581, 584, 4 USPQ2d 1621, 1624 (Fed. Cir. 1987). Moreover, the claims should be construed as one skilled in the art would construe them. *Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 986, 6 USPQ2d 1601, 1604 (Fed. Cir. 1988).

This court reviews a district court's claim interpretation as a matter of law, unbridled by the constraints of the "clearly erroneous" standard of review. That interpretation may

[1] The '970 patent claims asserted to be infringed are:

1. In an occult blood specimen test slide having a front panel, a rear panel, said front panel having one or more openings, sheet means carrying a test reagent between the front and rear panels underlying each of said openings, a hinged cover adapted to overlie a portion of the front panel and said openings and flap means in the rear panel opposite said openings and pivotable to expose the underside of the sheet, the improvement comprising: an area positioned on a portion of the sheet means facing the rear panel and isolated from the openings in the front panel, said area including a positive and negative monitor, said positive and negative monitors including the test reagent and said positive monitor additionally including a compound that reacts to environmental conditions in a manner similar to hemoglobin.

2. The slide of claim 1 in which the compound in the positive monitor is a blood component and the test reagent is guaiac.

4. The slide of claim 2 in which the positive and negative monitors are framed by a brightly colored inert border.

5. In a method for determining the presence of occult blood in a specimen test slide having a guaiac treated specimen receiving sheet between a front panel and a rear panel with openings in the front and rear panels and pivotable covers to cover said openings which consists of smearing fecal matter onto the guaiac sheet through an opening of the front panel and applying a developing solution to the guaiac sheet at the corresponding opening in the rear panel the improvement which comprises further applying the developing solution to an area positioned on a portion of the sheet facing the rear panel and isolated from he openings in the front panel, said area including a positive and negative monitor, said positive and negative monitors including the guaiac and said positive monitor additionally including a compound that reacts to environmental conditions in a manner similar to hemoglobin.

depend, as here, however, on evidentiary material which requires resolution of factual issues, such as what occurred during the prosecution history. *See, e.g., ZMI Corp.*, 844 F.2d at 1578, 6 USPQ2d at 1559; *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1054, 5 USPQ2d 1434, 1441 (Fed. Cir. 1988); *Tandon Corp. v. United States Int'l Trade Comm'n*, 831 F.2d 1017, 1021, 4 USPQ2d 1283, 1286 (Fed. Cir. 1987). We review resolution of those factual issues under the clearly erroneous standard. *See, e.g., Perini America*, 832 F.2d at 584, 4 USPQ2d at 1624.

The dispute in this case centers on the meaning of the claim limitation "including a compound that reacts to environmental conditions in a manner similar to hemoglobin," which appears in independent claims 1 and 5 and is, of course, a limitation in dependent claims 2 and 4. Helena argues, and the district court concluded, that the phrase must be interpreted to exclude hemoglobin itself. On the other hand, SKD contends that the phrase encompasses hemoglobin as well as other similar materials. We turn to the sources useful in claim interpretation to resolve this dispute.

1. *The Claim Language*

The first requirement in claim interpretation is to examine the claim language. *ZMI Corp.*, 844 F.2d at 1579, 6 USPQ2d at 1560; *McGill, Inc. v. John Zink Co.*, 736 F.2d 666, 672, 221 USPQ 944, 948 (Fed. Cir.), *cert. denied*, 469 U.S. 1037 (1984). Helena argues that the "ordinary" meaning of "similar to" excludes "identical." Although that argument has a superficial logic, we cannot agree, in the context of these claims, that the phrase "similar to hemoglobin" necessarily excludes hemoglobin.

In finding that the claims exclude hemoglobin, the district court relied upon the statement of one co-inventor, Dr. Lawrence. In a report on his work, Dr. Lawrence had written that "the stabilities of the proteins [such as hemoglobin] are too short to be compatible with standard dating of HEMOCCULT slides."[2] The district court took that statement to indicate Dr. Lawrence's belief that hemoglobin would not work. 662 F.Supp. at 628.

Taken in context, however, Dr. Lawrence's statement does not indicate that he believed hemoglobin would not work at all, as shown in the following additional excerpts from the report:

> A variety of catalysts may be printed: for example, . . . Fe/protopurphyrin (hemin); homo proteins such as hemoglobin (Hb) . . . may be similarly used.
>
> Printing of proteins such as Hb . . . presents practical difficulties. High concentrations are required . . . . More important, once printed the stabilities of the proteins are too short to be compatible with standard [three year] dating of Hemoccult(R) slides. . . .
>
> . . . .
>
> [H]emin spots have a dated stability comparable or greater than Hemoccult(R) slides.

Nowhere does Dr. Lawrence state that hemoglobin *cannot* be used. The thrust of his analysis is a justification for his preference for hemin over other alternatives, inasmuch as it had sufficient stability to meet the standard three-year dating period. In fact, Dr. Lawrence states that hemin and hemoglobin "may be similarly used." Moreover, he testified at trial that hemoglobin would work and that methods were known for stabilizing hemoglobin, one of the problems he noted as a reason why hemin works better. In any event, the claim does not contain a limitation with respect to the duration of the catalyst's effectiveness.

We cannot conclude that the claim language indicates what characteristics the catalyst must have. The limitation at issue does not identify specific catalysts to be included or excluded. Viewed in this manner, the limitation does not exclude hemoglobin; rather, it reflects the fact that a compound similar to hemoglobin may work better than hemoglobin itself.

2. *Specification*

The limitation need not be given a more restrictive meaning in the claims of the '970 patent by reason of the specification. The specification of the '970 patent shows a clear intent by the inventors to include hemoglobin when they claimed their invention. It states:

> Since guaiac-based fecal occult blood tests are actually testing for the catalytic activity of hemoglobin in blood, the *positive monitor should employ either hemoglobin or a catalyst which would react to adverse environmental conditions in a manner similar to hemoglobin. Preferably,* the test slide of this invention employs *hemin,* a hemoglobin derived catalyst, as the catalyst in the positive monitor.

'970 Patent Specification, col. 4, ln. 1-8 (issued Dec. 28, 1982) (emphasis added).

[2] Record of Invention, SKD, Case No. 14084, at 1 (March 12, 1981). By "instability," Dr. Lawrence referred to the tendency of catalytic compounds to decay over time.

Thus, the specification specifically discloses hemoglobin and hemin, with the latter preferred, as compounds to be used in the positive monitor. We agree with SKD that it would be a strained interpretation to exclude hemoglobin from the claims when the specification specifically discloses it as a viable candidate for the positive monitor catalyst.

Helena offers a convoluted argument to overcome the specification's disclosure of hemoglobin as a catalyst. The argument begins with the premise that the '970 patent described two functions for the monitor: testing both for proper functioning of the chemicals (guaiac and developer) and for deterioration of the fecal sample caused by the environment. (Other suppliers' slides test only the former and use hemoglobin). Thus, Helena asserts, the patent requires a control that deteriorates in the same way as the blood deteriorates in the fecal sample. Hemoglobin does not deteriorate like blood (note the instability problem Dr. Lawrence related), hence, Helena reasons, the patent claims cannot include hemoglobin. Per Helena, the specification suggests instead that hemin will perform both functions in the positive monitor, as will a compound that "reacts to environmental conditions in a manner similar to hemoglobin" in the blood of the fecal sample.

Helena's argument fails for a number of reasons. Most basic is the fact that neither the claims nor the specification require the positive monitor catalyst to deteriorate like blood in a fecal sample. In addition, the argument ignores entirely the specific disclosure in the specification that hemoglobin is a suitable compound for use as the catalyst. Finally, Helena offers no evidence to show that hemin, which it argues is encompassed by the claims, is relatively more like blood in the fecal samples in terms of deterioration than is hemoglobin.

3. *Prosecution History*

The prosecution history is still another tool useful for claim interpretation. *See, e.g., ZMI Corp.*, 844 F.2d at 1580, 6 USPQ2d at 1561; *McGill Inc.*, 736 F.2d at 673, 221 USPQ at 949. The district court relied most heavily on that tool and determined that, through a claim amendment, the inventors had narrowed the claims to exclude hemoglobin.

The claim limitation at issue was not present in the original claims as filed with the United States Patent and Trademark Office (PTO). Instead, claim 1 provided "the improvement comprising: a control area having a positive and a negative monitor said control area positioned on a portion of the sheet." The Examiner rejected the claims as obvious under 35 U.S.C. §103 (1982), citing United States patents to Pagano (3,996,006) and Friend (4,175,923).

Friend discloses a "throw-in-the-bowl" type of test product made of paper impregnated with guaiac. A section of the paper also has impregnated a blood component (forming a built-in positive monitor). The user sprays the entire paper sheet with developer and first observes it to confirm that the guaiac chemical is working properly. Proper functioning is assured if the part of the paper impregnated with blood component turns blue. The user then drops the product into a toilet bowl containing fecal matter, where the remainder of the paper will turn blue if the fecal matter contains blood or will remain white, indicating the absence of blood.

The Examiner maintained that it would have been obvious from the teaching of Friend to provide positive and negative monitors on the Pagano slide. In response to the First Office Action, on January 25, 1982, the inventors argued that "Friend fails to disclose any negative monitor or control." Thereafter, the Examiner issued a Final Action rejecting the claims as obvious: "Even though Friend is concerned with positive control, it would be obvious to the routineer that both positive and negative controls could be incorporated in Pagano."

The Examiner granted the inventors an interview on July 8, 1982, which the Examiner summarized as discussing the arguments "that areas are not only control but monitors of performance for both false positives and negatives" and "that prior art does not show a negative monitor that indicates false positives." The inventors described the interview, in an Amendment After Final Rejection filed on July 20, 1982, as emphasizing "that Friend fails to disclose any negative monitor or control. . . . The criticality of having a negative monitor present on the occult blood slide was thoroughly discussed at the interview." At this point in the prosecution, neither the Examiner nor the inventors had mentioned the limitation now at issue.

Those parties then conducted a telephone interview on July 27, 1982. In his Summary Record of the conversation, the Examiner states:

> Agreed to amendment of the claims as per Examiner's Amendment (Paper No. 9) to particularly recite the positive and negative monitors.

Paper No. 9 contained the amendment introducing the "similar to hemoglobin" limitation at issue. Following that amendment, the

'970 patent claims were allowed on August 6, 1982.

The district court concluded that the Examiner allowed the patent claims only because of the amendment to overcome the disclosure in the Friend patent. Finding that Friend discloses use of hemoglobin as the positive catalyst, the court determined that the amendment narrowed the claims to avoid that disclosure by excluding hemoglobin from the '970 claims.

Where the district court clearly erred is in its last finding, that the amendment was made to overcome the disclosed use of *hemoglobin* in a monitor. Friend does not specifically disclose or claim a hemoglobin catalyst. Rather, Friend claims "blood" as a substrate or composition for the positive monitor catalyst. Friend's patent specification discloses "commercially available dried human or animal blood" and "components of blood" as the positive catalyst. Consequently, Friend's teaching, although it includes hemoglobin as the catalyst, was not so restricted and an amendment excluding hemoglobin but including hemin (another blood component) would not have overcome Friend's broad disclosure of blood component catalysts.

Thus, we are unpersuaded that the amendment to claim subject matter "similar to" hemoglobin was made to overcome Friend's disclosure of a hemoglobin catalyst. The purpose of the amendment is unclear. SKD reads the Examiner's statement that the amendment was made "to particularly recite the positive and negative monitors" literally and contends that the amendment was made only to satisfy the definiteness requirement of 35 U.S.C. §112 (1982) ("The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention."), and not to avoid an obviousness rejection based upon the prior art. We need not determine the purpose for the amendment. We merely hold that the district court's finding, that the amendment was made to overcome Friend's disclosure of a hemoglobin catalyst, is clearly erroneous.

4. *Conclusion*

[1] The district court's findings that the inventor believed hemoglobin would not work and that the claims were amended to exclude hemoglobin disclosed as a catalyst in the prior art are clearly erroneous. We conclude, as a matter of law, that the asserted claims of the '970 patent, properly interpreted, include hemoglobin itself, as well as compounds that react to environmental conditions in a manner similar to hemoglobin, as a positive monitor catalyst.

Because we have determined that the district court improperly interpreted the claims, the remainder of its decisional process on the issues of validity and infringement is distorted. *See, e.g. Panduit Corp.*, 810 F.2d 1561, 1576, 1 USPQ2d 1593, 1603 (Fed. Cir.) ("When the prior art is compared with erroneously interpreted claims, findings of differences between the prior art and the claims will necessarily be clearly erroneous."), *cert. denied*, 107 S.Ct. 2187 (1987); *Moeller v. Ionetics, Inc.*, 794 F.2d 653, 656, 229 USPQ 992, 994 (Fed. Cir. 1986) (improper claim construction can distort entire infringement analysis). Keeping this in mind, we now turn to those issues.

B. *Validity*

1. *Obviousness*

a. *The Standard*

[2] Helena challenges validity of the '970 patent on the grounds that the claimed invention would have been obvious within the meaning of 35 U.S.C. §103 (1982).[3] In evaluating that challenge, the district court properly began its analysis with the presumption that the patent is valid. *See* 35 U.S.C. §282 (1982). That presumption places the burden of proof of facts, and the ultimate burden of persuasion to establish invalidity, on Helena. *See, e.g., Carella v. Starlight Archery & Pro Line Co.*, 804 F.2d 135, 138, 231 USPQ 644, 646 (Fed. Cir.), *amended* 1 USPQ2d 1209 (Fed. Cir. 1986). In reviewing the district court's factual findings underlying its conclusion, we are governed by the clearly erroneous standard. *See, e.g., Panduit Corp.*, 810 F.2d at 1566, 1 USPQ2d at 1595-96. We review the conclusion of obviousness or nonobviousness drawn from the facts so reviewed as a matter of law. *Id.* at 1569, 1 USPQ2d at 1598.

b. *The Factual Inquiries*

Although the district court upheld the validity of the claims in issue, it did so only if

[3] Section 103 provides in relevant part:
A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

the claims were interpreted to exclude hemoglobin. 662 F.Supp. at 626. Having concluded that hemoglobin is within the claims, we can affirm the judgment of validity only if the facts are undisputed or if the court made other findings which lead to that same legal conclusion of nonobviousness despite the claims' coverage of hemoglobin.[4] The latter situation occurs here. The court found that "[t]he '970 patent discloses and claims the *first* fecal occult blood specimen test *slides having built-in positive and negative monitors* for verifying the proper performance of the slide." *Id.* at 624 (emphasis added). The court also made the following findings which are pertinent to the issue of nonobviousness:

> Dr. Lawrence of SKD, a coinventor of the '970 patent, followed a different approach [from that historically taken], namely a [sic] built-in positive and negative controls on each slide. This had the advantage of verifying the performance of every slide and it was much easier to use than external controls. Furthermore, a built-in positive monitor printed during manufacturing gave more reproducible results than external controls that were applied in variable amounts. Dr. Lawrence's approach was also new in that he no longer sought only controls that simulated feces. Monitors that indicated only whether the slide and developer were working properly avoided the confusion that could result from comparing the test results on the actual fecal specimen and on the monitors.

Id. at 625.

The above analysis would lead to a conclusion of nonobviousness even if hemoglobin is the catalyst. The court did not explain why hemoglobin as the positive monitor catalyst changed that analysis, and we see none.

[4] An appellate court may make a finding of fact on evidence that is undisputed. *See, e.g., King v. Commissioner of Internal Revenue*, 458 F.2d 245, 249 (6th Cir. 1972); *Sbicca-Del Mac, Inc. v. Milius Shoe Co.*, 145 F.2d 389, 400, 63 USPQ 249, 260 (8th Cir. 1944); 9 C. Wright & A. Miller, *Federal Practice & Procedure: Civil* §2577 at 699-701 (1971) ("[I]t is settled that findings are not jurisdictional and the appellate court may decide the appeal without further findings if it feels that it is in a position to do so. . . . A remand has been thought unnecessary if all the evidence is documentary or if the facts are undisputed.") (footnotes omitted); *cf. B.D. Click Co. v. United States*, 614 F.2d 748, 755 (Ct. Cl. 1980). An appellate court may also make such a finding even when the evidence is disputed if, as a matter of law, the court could only make one finding of fact or decide the fact in only one way. Otherwise, protracted litigation and unnecessary delay and expense would occur. *B.D. Click*, 614 F.2d at 755.

Helena maintains that the court erred in not holding the claims invalid, whether or not hemoglobin is the catalyst, because the improvement of placing monitors on a Pagano slide is obvious from the Friend teaching of a positive monitor on the throw-in-the-bowl type of occult blood testing device and method. Given the nature of the Friend product, we cannot agree that the disclosure of a control in Friend (whether positive alone or positive and negative) is a sufficient teaching to make the claimed combination obvious.

[3] Friend explicitly discloses only a positive monitor. Although never mentioned by Friend, if the portions of the paper not impregnated with blood component do not remain white when developer is applied, then product contamination would be indicated. The parties dispute whether that fact amounts to an inherent disclosure of a negative monitor. The asserted "inherent" monitor of Friend's claimed product is the test area itself, however, whereas the claims at issue require control areas which are "isolated from" the test areas on the "rear" of the slide. Merely pointing to a negative monitor in the prior art, which constitutes Helena's main argument to establish obviousness, is unpersuasive. Helena cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention. *See, e.g., Azko N.V. v. United States Int'l Trade Comm'n*, 808 F.2d 1471, 1481, 1 USPQ2d 1241, 1246 (Fed. Cir. 1986), *cert. denied*, 107 S.Ct. 2490 (1987). Helena has the burden to show some teaching or suggestion in the references to support their use in the particular claimed combination. *Uniroyal Inc.*, 837 F.2d at 1051, 5 USPQ2d at 1438-39. A holding that combination claims are invalid based merely upon finding similar elements in separate prior art patents would be "contrary to statute and would defeat the congressional purpose in enacting Title 35." *Panduit Corp.*, 810 F.2d at 1577, 1 USPQ2d at 1605.

Friend's suggestion begins and ends with the disclosure of a built-in control. Nothing in Friend suggests the particular structure or method of the claims, read as a whole. *Id.* (claims, entire prior art, and prior art patents must each be read "as a whole"). The claimed structure positions the monitors on each slide in such a way that the fecal material may contact the slide without contaminating the control areas. *See* '970 Patent Specification at col. 2, ln. 10-18 ("These [monitors] comprise two small areas or spots printed on an isolated area of the guaiac test paper at some distance from the portions of the test paper underlying each of the [two test areas]. In this manner the positive spot

(monitor) is of such shape and size and placed in such a positive relation to the stool sample(s) that there can be no confusion of its blue color with that of a positive stool sample."). This location provides the advantage that the fecal matter may be conveniently tested at the later time by a laboratory or physician, at which time the monitors will also be activated. *See id.* at col. 3, ln. 38-53 ("To use the slide, the patient ... applies with an applicator a thin smear of specimen from a portion of his stool on sheet 32 through opening 30 .... The cover is then closed .... The patient returns the slide either to his physician or a laboratory. The physician or technician [adds] developing solution ... [and] [t]he test results are then observed.").

Helena also asserts that the claim language is so broad that it would encompass prior art controls in which a blood component for monitoring purposes is not originally on the slide. On the other hand, SKD asserts that the claims require that the monitor must be built into the slide. We agree with SKD.

> The specification states that:
>
> It is still a further object of this invention to provide a simple, rapid, convenient, inexpensive and *built-in control test* which would monitor the test reagents from the date of manufacture to the date of development.

Id. at col. 2, ln. 2-6 (emphasis added). That portion of the specification supports the district court's view that "[t]he '970 patent discloses and claims the first fecal occult blood specimen test slide having built-in positive and negative monitors for verifying the proper performance of the slide." 662 F. Supp. at 624. The claims that the district court was referring to when it stated its view were claims 1 and 5, which require "an area *positioned on* a portion of *the sheet* ...., said area including a positive and negative monitor." (Emphasis added.) Thus, we agree with the district court's interpretation that the '970 patent claims a test slide having built-in positive and negative monitors. Accordingly, we conclude that, fairly read, the claims cover only slides in which the catalyst is built into the slide itself.

We also agree with the district court that some, but not overwhelming, support for a conclusion of nonobviousness is provided by the objective evidence. *See, e.g., W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555, 220 USPQ 303, 314 (Fed. Cir. 1983) (Objective evidence of nonobviousness "may in a given case be entitled to more weight or less, depending on its nature and its relationship to the merits of the invention. It may be the most pertinent, probative, and revealing evidence available" on the issue.), *cert. denied*, 469 U.S. 851 (1984).[5]

c. *Conclusion*

After consideration of all of Helena's arguments, we are unpersuaded that the facts established by the record lead to the conclusion that the claims of the '970 patent are invalid under 35 U.S.C. §103. Accordingly, we affirm the district court's judgment of validity, but on different grounds from those stated by that court.

2. *Inventorship*

Helena contends that the '970 patent is invalid because it does not satisfy the requirement that the true inventor or inventors be named.[6] The springboard to that contention is Helena's interpretation of the '970 patent claims as not restricted to built-in control monitors. Using that springboard, Helena asserts that the patent claims match the work done by Lawrence's and Townsley's predecessors at SKD. We agree with the district court, however, that the claims are restricted to built-in monitors. Helena does not contend that Lawrence and Townsley were not the true inventors of the claimed subject matter when the claims are so interpreted.

Helena frames an additional challenge to the '970 patent on the grounds that the named joint inventors did not jointly invent every claim in the '970 patent. SKD does not contest that fact; instead, it relies on the current patent statute, which provides:

> Inventors may apply for a patent jointly even though (1) they did not physically work together or at the same time, (2) each did not make the same type or amount of contribution, or (3) each did not make a contribution to the subject matter of every claim of the patent.

35 U.S.C. §116 (1982) (as amended by the Patent Law Amendments Act of 1984, Pub. L. No. 98-622, 98 Stat. 3383 (1984) (hereinafter, "the Act")). If this section applies to the '970 patent, Helena's challenge fails. We hold that section 116 applies.

[5] We need not decide whether, had resolution of the factual inquiries presented a "clear and very strong case of obviousness," *EWP Corp. v. Reliance Universal Inc.*, 755 F.2d 898, 907, 225 USPQ 20, 25 (Fed. Cir.), *cert. denied*, 474 U.S. 843 (1985), rather than nonobviousness, the objective evidence provided would have outbalanced that case and shown nonobviousness.

[6] The patent statute provides that "whoever invents or discovers" the patentable subject matter "may obtain a patent therefor." 35 U.S.C. §101 (1982).

The 1984 amendments made a number of substantive changes in the patent statute. Section 106(a) of the Act, *reprinted at* 35 U.S.C. §103 note (Supp. II 1984), states that with certain exceptions "the amendments made by this Act ... shall apply to all United States patents granted before, on, or after the date of enactment [Nov. 8, 1984]." At least, *prima facie*, the 1984 amendment of section 116 applies to the '970 patent. Helena asserts, however, that it does not apply retroactively because of the exception provided in section 106(e). Section 106(e) states: "[T]he amendments made by this Act shall not affect the right of any party in any case pending in court on the date of enactment to have their rights determined on the basis of the substantive law in effect prior to the date of enactment." This case was pending on November 8, 1984, the date of enactment. The "substantive law" in effect on that date, per Helena, was that a patent was invalid for failure to name proper inventors unless the inventorship entity named was the true origin of *every* claim in a patent containing more than one claim, i.e., the "all claims" rule.

Helena's argument fails because the "all claims" rule was not uniformly accepted as "the substantive law" before the 1984 Act. *Compare In re Sarret*, 327 F.2d 1005, 1010 n.7, 140 USPQ 474, 479 n.7 (CCPA 1964); *In re Hamilton*, 37 F.2d 758, 759, 4 USPQ 224, 227 (CCPA 1930); *Rival Mfg. Co. v. Dazey Prods. Co.*, 358 F.Supp. 91, 101, 177 USPQ 432, 439 (W.D. Mo. 1973); *Stewart v. Tenk*, 32 F. 665, 666 (S.D. Ill. 1887), *with United States v. Telectronics, Inc.*, 658 F.Supp. 579, 592, 3 USPQ2d 1571, 1580 (D. Colo. 1987); *Vekamaf Holland B.V. v. Pepe Benders, Inc.*, 211 USPQ 955, 966-67 (D. Minn. 1981); *SAB Industri AB v. Bendix Corp.*, 199 USPQ 95, 104 (E.D. Va. 1978). The 1984 amendment clearly repudiates the rule. *See generally* 1 D. Chisum, *Patents*, §2.03[3] at 2-25 to -28 (1987).

[4] We do not believe Congress intended, by the exception of section 106(e), to give a litigant a right to invoke the law of a particular circuit on joint inventorship or to preserve a conflict, even for a limited time, between circuits on this issue. Thus, we hold that section 106(e) does not negate the applicability of amended section 116 to the '970 patent and Helena's challenge fails.

C. *Infringement*

1. *Literal Infringement*

This court has repeatedly stated that direct infringement requires a two-step analysis. The claimed invention must first be defined, a legal question of claim interpretation. Second, the trier of fact must determine whether the claims, as properly interpreted, cover the accused device or process. The second step involves a question of fact. *See, e.g. Specialty Composites*, 845 F.2d at 986, 6 USPQ2d at 1603; *Envirotech Corp. v. Al George, Inc.*, 730 F.2d 753, 758, 221 USPQ 473, 477 (Fed. Cir. 1984); *Fromson v. Advance Offset Plate, Inc.*, 720 F.2d 1565, 1569, 219 USPQ 1137, 1140 (Fed. Cir. 1983). The burden is on SKD, as the patent owner, to prove infringement by a preponderance of the evidence. *See, e.g., Uniroyal, Inc.*, 837 F.2d at 1054, 5 USPQ2d at 1441. Such proof must show that every limitation of the patent claims asserted to be infringed is found in the accused device, either literally or by an equivalent. *See Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935, 4 USPQ2d 1737, 1739-40 (Fed. Cir. 1987) (in banc), *cert. denied*, 108 S.Ct. 1226, 1474 (1988).

We have already performed the first step of the analysis above and have determined that, properly interpreted, independent claims 1 and 5 cover hemoglobin as the positive monitor catalyst.[7] Based upon that interpretation, the second step of the analysis follows without extended commentary. There is no dispute that, before Helena changed its catalyst to lead acetate, Helena's slides contained hemoglobin as the positive monitor catalyst. Moreover, Helena does not contend that its accused product does not embody every other limitation of the asserted claims. Accordingly, any finding other than that the '970 patent claims literally read on Helena's slides containing hemoglobin would be clearly erroneous.

[7] Having construed the claims one way for determining validity, it is axiomatic that the claim must be construed in the same way for infringement. *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 842 F.2d 1275, 1279, 6 USPQ2d 1277, 1280 (Fed. Cir. 1988); *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1449, 223 USPQ 603, 610 (Fed. Cir. 1984); *cf. Autogiro Co. of Am. v. United States*, 384 F.2d 391, 399, 155 USPQ 697, 704 (Ct. Cl. 1967) (patentee cannot construe claims narrowly before Patent Office and later broadly before court).

2. *Reverse Doctrine of Equivalents*

A finding that the words of the claims literally read on the accused device does not necessarily end the infringement inquiry. Although SKD has carried its burden and proven that the '970 patent claims asserted read on Helena's hemoglobin-containing slides, Helena may establish the fact of noninfringement by carrying its burden of going forward to show its device "has been so far changed in principle that it performs the same or similar function in a substantially-different way." *SRI Int'l*, 775 F.2d at 1123-24, 227 USPQ at 587; *see also Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608-09 [85 USPQ 328, 330-31] (1950). Helena has attempted to carry its burden by pointing to Dr. Lawrence's alleged admission that hemoglobin would not work. Helena's argument, which the district court accepted, 662 F.Supp. at 628, is that Dr. Lawrence's statement indicates hemoglobin operates in a substantially different way from the compounds SKD successfully used as positive monitor catalysts.

As indicated above, Dr. Lawrence never stated that hemoglobin would not work as a catalyst. Claims 1 and 5 of the '970 patent cover compounds that react to environmental conditions in a manner similar to hemoglobin. We have held these claims to include hemoglobin itself as one possible catalyst. Thus, hemoglobin does not operate in a substantially different way from the compounds claimed — which include hemoglobin — and we reject Helena's argument based on the reverse doctrine of equivalents.[8]

3. *Estoppel to Deny Infringement*

With respect to Helena's slides containing lead acetate as the catalyst in the positive monitor, SKD concedes those slides do not infringe the '970 patent either literally or under the doctrine of equivalents. SKD poses, however, a unique "infringement by estoppel" theory. In April 1984, Helena began marketing COLOSCREEN slides containing lead acetate in place of hemoglobin, but failed to alter a package insert stating that the positive monitor contained hemoglobin. The insert was not corrected until November 1985. SKD's theory is that Helena, by incorrectly identifying hemoglobin as the catalyst in the positive monitor, obtained sales to customers who would not otherwise have purchased Helena's product. Had customers known Helena's product did not contain a catalyst similar to the hemoglobin the test was designed to discover, SKD argues, they would not have purchased Helena's product. Having obtained the benefit of such sales, Helena should be estopped, per SKD, from denying that the COLOSCREEN slides marketed between April 1984 and November 1985 contain hemoglobin. Accordingly, because slides containing hemoglobin infringe the '970 patent, the lead acetate slides, per SKD, infringe by estoppel.

The district court rejected SKD's position that these facts establish an estoppel. SKD's theory of estoppel rests on *Crane Co. v. Aeroquip Corp.*, 364 F.Supp. 547, 179 USPQ 596 (N.D. Ill. 1973), *aff'd in part & rev'd in part on other grounds*, 504 F.2d 1086, 183 USPQ 577 (7th Cir. 1974), and its assertion that the case is "completely analogous and should be followed in this case." In *Crane*, Crane licensed Aeroquip to manufacture pipe couplings under the former's patent. Aeroquip then modified its product, which the district court found did not infringe Crane's patent, but continued to place Crane's patent number on its modified couplings. Citing "marking estoppel" cases,[9] the district court found Aeroquip "estopped to deny that it is *liable for royalties* on [the modified] couplings." 364 F.Supp. at 560, 179 USPQ at 606-07 (emphasis added). The Seventh Circuit found that the modified couplings came within the scope of the claims and, thus, expressed "no opinion" on the marking estoppel issue. 504 F.2d at 1093, 183 USPQ at 581.

[5] Whatever the validity of the "marking estoppel" line of cases, we do not find *Crane* applicable to the present case. Helena never took a license under SKD's patent. Accordingly, *liability for royalty* payments is not at issue here. Helena did not place an erroneous patent number on its lead acetate product; it erroneously identified the catalyst used on its product. The district court in *Crane* reached its result, in part, on the reasoning that

> it should be recognized that application of the marking estoppel doctrine in this case should have an important therapeutic function in protecting the public interest. Manufacturers should be on notice that care must be taken in avoiding misrepresentation to the public that goods are protected by a patent.

364 F.Supp. at 560, 179 USPQ at 607. Such reasoning is inapplicable to this case.

35 U.S.C. §271(a) provides:

> Except as otherwise provided in this title, whoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefore, infringes the patent."

Helena's lead acetate product is not the "patented invention" and, therefore, is not an infringement as defined by the statute. We do not accept the proposition that an *admittedly noninfringing* product can be converted by estoppel to an infringing product.

4. *Summary of Infringement Analysis*

Based on properly interpreted claims, Helena's slides which contain hemoglobin literally infringe the asserted claims of the '970 patent. The district court's finding of noninfringement is clearly erroneous, based as it is upon a legally erroneous interpretation of the asserted claims. We reverse that portion of the court's judgment finding noninfringement by Helena's hemoglobin-containing slides. With respect to Helena's slides containing lead acetate as the positive monitor catalyst, however, we agree with the court that SKD failed to carry its burden of proving infringement. Accordingly, we affirm the court's finding of noninfringement as to the lead acetate product.

D. *Inequitable Conduct*

In its cross appeal, Helena contends that the district court erred in failing to hold the '970 patent unenforceable. The grounds for Helena's charge of unenforceability are four alleged breaches of the duty to disclose material information, and to disclose that information accurately, to the PTO during prosecution of the '970 patent. *See* 37 C.F.R. §1.56 (1987). Such a breach may constitute inequitable conduct sufficient to render a patent unenforceable. *See, e.g., J.P. Stevens & Co. v. Lex Tex, Ltd.*, 747 F.2d 1553, 1559, 223 USPQ 1089, 1092 (Fed. Cir. 1984), *cert. denied*, 474 U.S. 822 (1985); *American Hoist & Derrick Co. v. Sowa & Sons, Inc.*, 725 F.2d 1350, 1362-63, 220 USPQ 763, 773 (Fed. Cir.), *cert. denied*, 469 U.S. 821 [224 USPQ 520] (1984).

Having found no infringement, the district court apparently did not consider it necessary to reach the question of enforceability. Because we reverse the finding of noninfringement, the defense of inequitable conduct must be considered. When the pertinent facts are undisputed, as here, an appellate court need not remand for the trial court to make findings and conclusions but may resolve the issue. *See, e.g., Icicle Seafoods, Inc. v. Worthington*, 475 U.S. 709, 714 (1986); *UMC Elecs. Co. v. United States*, 816 F.2d 647, 657, 2 USPQ2d 1465, 1472 (Fed. Cir. 1987), *cert. denied*, 108 S.Ct. 748 (1988); *see also* 28 U.S.C. §2106 (1982) ("any . . . court of appellate jurisdiction . . . as may be just under the circumstances.").

To hold that a patentee has committed inequitable conduct, this court has uniformly held that *both* materiality and intent must be proven by clear and convincing evidence. *See, e.g., FMC Corp. v. Manitowoc Co.*, 835 F.2d 1411, 1415, 5 USPQ2d 1112, 1115 (Fed. Cir. 1987). Thus, "[t]o be guilty of inequitable conduct, one must have intended to act inequitably." *Id.* Proof of deliberate scheming is unnecessary; gross negligence may constitute sufficient wrongful intent to support a holding of inequitable conduct. *See Reactive Metals & Alloys Corp. v. ESM, Inc.*, 769 F.2d 1578, 1583-84, 226 USPQ 821, 825 (Fed. Cir. 1985).

[6] In the present case, however, there is no evidence of actual wrongful intent or gross negligence by the patentee. Helena's complete failure to present any evidence of intent likely follows its initial misunderstanding, which it later corrected, that "under the relevant case law, intent is not material to a determination of unenforceability, since Helena is *not* alleging fraud." As stated above, this court has uniformly held evidence of intent, not only material but, a *requirement* for a holding of inequitable conduct. Such evidence need not be direct, it may be inferred from the patentee's conduct. *See Hycor Corp. v. Schlueter Co.*, 740 F.2d 1529, 1538-39, 222 USPQ 553, 561-62 (Fed. Cir. 1984). Nevertheless, some evidence on the issue must exist.

Because Helena has failed to present any evidence, let alone clear and convincing evidence, that the '970 patent was procured by an applicant having withheld information through at least grossly negligent conduct, it has failed to raise a genuine issue for trial that the '970 patent is unenforceable.

E. *Helena's Other Defenses & Counterclaim*

[8] Because we have decided that Helena's accused product containing hemoglobin as the positive monitor catalyst literally infringes the '970 patent claims, we need not and do not review the district court's analysis of infringement under the doctrine of equivalents.

[9] We note the line of cases sometimes called "marking estoppel" cases, in which, under some circumstances, a party that marks its product with a patent number is estopped from asserting that the product is not covered by the patent. *See, e.g., Gridiron Steel Co. v. Jones & Laughlin Steel Corp.*, 361 F.2d 791, 796-97, 149 USPQ 877, 880-81 (6th Cir. 1966); *Collis Co. v. Consolidated Mach. Tool Corp.*, 41 F.2d 641, 645, 6 USPQ 109, 113 (8th Cir.), *cert. denied*, 282 U.S. 886 (1930); *Piaget Novelty Co. v. Headley*, 108 F. 870, 872 (2d Cir. 1901).

On appeal it is Helena's burden to show not only that the district court erred, but also to persuade this court that had such error not occurred the result might have been different. *See, e.g.*, 28 U.S.C. §2111 (1982); *Cable Elec. Prod., Inc. v. Genmark, Inc.*, 770 F.2d 1015, 1021, 226 USPQ 881, 884 (Fed. Cir. 1985) ("Even assuming that such errors were committed [by the district court], Cable must demonstrate that if the errors were corrected, the application of the law to the facts present would produce a different result. In short, such errors as may be demonstrated must have further been harmful.") (citations omitted); *Gardner v. TEC Sys., Inc.*, 725 F.2d 1338, 1345, 220 USPQ 777, 782 (Fed. Cir.) (in banc) (courts of appeal shall disregard harmless errors which do not affect parties' substantive rights), *cert. denied*, 469 U.S. 830 [225 USPQ 232] (1984). None of Helena's other charges of error rise to that level. The remaining "errors" concern matters on which the court made no specific rulings.

Although Helena charged SKD with unfair competition, *inter alia*, from interference with customer and vendor relationships and from patent misuse, the evidence on these matters is so inconsequential that the district court apparently did not treat it as a viable issue. Similarly, the assertion that the case should be dismissed for lack of jurisdiction based on an absence of direct evidence that Helena sold infringing products at the time SKD brought suit is meritless. Indirect evidence from which such inference may be drawn is adequate. Having reviewed the evidence called to our attention by Helena, we see no reason to remand for the district court to make specific rulings on these matters. No *prima facie* case was made out on any of them. Moreover, after the court issued its memorandum of findings of fact and conclusions of law without specific rulings, Helena failed to bring the alleged omissions to the trial court's attention. Helena's failure to give the court an opportunity to correct its alleged error in not ruling on these matters, under the circumstances here, could be deemed a waiver. Given their lack of substance, however, we are unpersuaded of prejudicial error in any event.

III
CONCLUSION

We affirm those portions of the district court's judgment holding claims 1, 2, 4, and 5 valid as between the parties, on different grounds. We also affirm that portion of the court's judgment finding that Helena's product containing lead acetate does not infringe the '970 patent. We reverse the portion of the court's judgment finding Helena's hemoglobin product noninfringing. We remand for calculation of damages.

COSTS

Each party shall bear its own costs of appeal.

MODIFIED IN PART, AFFIRMED IN PART, REVERSED IN PART, AND REMANDED.

District Court, S.D. New York

Berger & Gorin Inc. v. Gary Plastic Packaging Corp.

No. 84 Civ. 4164 (PNL)

Decided July 20, 1988

PATENTS

1. Patentability/Validity — Fraud or inequitable conduct (§115.15)

Title — Licenses (§150.05)

Patentee's taking of license in undisclosed technology does not, standing alone, require finding of deceitful intent, but rather such failure to disclose prior art must be considered based upon overall circumstances.

2. Patentability/Validity — Obviousness — Secondary considerations generally (§115.0907)

Plastic device for displaying belts that was designed at customer's request to serve industry need and that remained industry leader for years following its development is not obvious, nor is subsequent device used for hanging belts with stud buckles, in view of evidence demonstrating that belt marketing industry suffered for several years from problem which device was designed to remedy.

3. Infringement — Doctrine of equivalents — In general (§120.0701)

Plaintiff's patents for retail belt display are not infringed under doctrine of equivalents by defendant's display hanger for tongue-buckle belts which has tear-shaped fastening hole differing from plaintiff's horizontal slot and which allows easier use than plaintiff's fastening hole, or by defendant's display hanger for stud-buckle belts which has different double-flanged type hole to receive stud of buckle.

JUDICIAL PRACTICE AND PROCEDURE

4. Procedure — Defenses; laches; estoppel (§410.18)

REMEDIES

Monetary — Damages — Patents — Increased damages (§510.0507.07)

Defendant which acted in disregard for patentee's rights has committed willful infringement, even though it obtained opinion from counsel concerning patent's invalidity, since such casual opinion was retracted by attorney's subsequent, more thorough opinion that contained no suggestion of invalidity, and defendant's inequitable conduct as willful infringer deprives it of equitable defenses of laches and estoppel.

Particular patents — General and mechanical — Display belt hangers

3,710,996, Smilov and Kayen, improved belt hanger hook device for displaying tongue-buckle belts with price tag showing and with tail engaging means to prevent undetected removal of belt from hanger, valid and infringed.

4,063,669, Smilov and Kayen, belt hanger hook device for displaying belt and comprising tail loop for engaging with stud-buckle belts and for shielding buckles from accidental contact with other objects, valid and infringed.

Patent infringement action brought by Berger & Gorin Inc. against Gary Plastic Packaging Corp. Judgment of willful infringement by defendant by its 1975 and 1978 hangers.

James J. Daley and Albert Robin, New York, N.Y., for plaintiff.

Amster, Rothstein & Engelberg (Michael J. Berger, of counsel), New York, for defendant.

Leval, J.

This is an action for patent infringement. The two patents in question are for plastic belt hangers designed to display belts as merchandise in a store. Plaintiff Berger & Gorin, Inc. ("B&G") and defendant Gary Plastic Packaging Corp. ("Gary") both engage in the manufacture of plastic belt hangers.

Plaintiff's first patent No. 3,710,996 (the "'996" or "Snap-Tail" patent) was filed August 2, 1971 and issued January 16, 1973. It claims a belt-hanging device having a hook at the top (so as to hang the device from a merchandise display rod). (*See* Appendix I [omitted].) (On the hook portion are broad flat areas used to display size and brand names.) Hanging below the hook is a flexible strap (or tail) that bends at the middle (to engage the buckle of the belt). At the bottom of the tail is a mushroom-shaped projection and at the top is a hole slightly smaller than the head of the lower projection. After passing the tail through the buckle of the belt, the tail may be secured in the folded position by pushing the head of the projection at the bottom through the hole at the top. Halfway down the tail is a configuration of slits in the shape of an inverted T (whose bar is on the fold line of the tail). The prong of the belt buckle is secured to the hanger by rotating the hanger and pushing the tip of the prong into these slits.

The Snap-Tail hanger represented improvement in several respects over prior art. Earlier hangers were often made with a short tab, which had a similar hook at the top but which did not fold. The tab had a single hold or inverse T-slit, which was used to attach the belt buckle (TE 24, 25.) The tab would be inserted into the belt buckle, whose prong would be pushed through the hole in the tab. Such devices were unreliably secured to the belt; the hangers easily became detached from the belt. Also the belt would hang at an angle which gave an unpleasing appearance and took extra space, diminishing the number of belts that could be displayed on the rod.

The '996 Snap-Tail hanger improved these features. It was far more securely attached to the belt. In addition, the hanger and belt hung straight down in the same plane, perpendicular to the merchandise rod.

The second B&G patent (filed September 10, 1975, issued December 20, 1979) under No. 4,063,669 (the "'669" or "Stud-Belt patent) is identical to the Snap-Tail but with an additional feature designed for use with stud belts. (*See* Appendix II. [omitted])

A stud belt is designed differently and functions differently from a conventional prong-buckle belt. Prong-buckle belts are worn by passing the free end through the open portion of the buckle and inserting the prong into a hole in the belt. Stud-belt buckles, in contrast, do not have an opening or a pivoting prong. The buckle is generally solid and lays over the free end of the belt. On the underside of the buckle is a laterally protruding stud which is inserted into a hole in the other end of the belt. Sometimes such studs

found as actual damages, not exceeding three times such amount.

15 U.S.C. § 1117(a). As described above, the increase in damages is awarded in all but exceptional circumstances when, as in this case, the Defendant intentionally used a counterfeit mark. 15 U.S.C. § 1117(b). The Sixth Circuit appears to interpret the words "not exceeding" to modify the phrase "above the amount," so that the amount of the increase cannot exceed three times the amount of actual damages. The Court disagrees. Removing the language which grants the Court discretion to modify the award "according to the circumstances of the case," the statute reads that the *judgment* may be "for any sum above the amount found as actual damages not exceeding three times such amount." The words "not exceeding" thus modify "judgment," implying that the Court's power is limited to making a total award of up to three times the actual amount.

[8] South County argues that trebling is inappropriate because it did not intentionally apply a counterfeit mark. The statute, however, requires only that South County intentionally use a mark knowing it to be counterfeit. 15 U.S.C. § 1117(b); *see also Babbit Electronics, Inc. v. Dynascan Corp.*, 38 F.3d 1161, 1181 [33 USPQ2d 1001] (11th Cir. 1994). It is undisputed that South County intentionally placed the mark (or allowed it to be placed) on at least 60 motorcycles. The question before the Court is whether South County knew that the mark was counterfeit.

A "counterfeit mark" is a "spurious mark which is identical with, or substantially indistinguishable from, a registered mark." 15 U.S.C. § 1127. In *Babbit*, the Court held that the infringer had intentionally used a counterfeit mark where the infringer had affixed Dynascan's mark to products that the infringer knew were not Dynascan's. 38 F.3d at 1181. Similarly, there is no dispute that when South County placed the Harley-Davidson logo on motorcycles it was fully aware that the motorcycles were not Harleys. *See* Sotelo Test., 53:6-12 (discussing the similarities between custom motorcycles assembled by South County and Harley-Davidson motorcycles). By intentionally placing the Harley-Davidson mark on motorcycles it knew were assembled without without Harley's blessing, South County committed an act of intentional infringement, even if it was unaware of the precise legal name for its actions. *See Acheson v. Kuniyuki*, 190 F.2d 897, 898 (9th Cir. 1951) (per curium) (citing the "ancient rule" that ignorance of the law is not excuse). Plaintiffs are thus entitled to treble damages totaling $1,620,000.

G. Injunctive Relief

The Lanham Act provides for injunctive relief "to prevent the violation of any right of the registrant [in] a mark." 15 U.S.C. § 1116(a). Injunctive relief is the "remedy of choice" in trademark cases. *See Century 21*, 846 F.2d at 1180. In trademark actions, "once the plaintiff establishes a likelihood of confusion, it is ordinarily presumed that the plaintiff will suffer irreparable harm if injunctive relief is not granted." *Vision Sports, Inc. v. Melville Corp.*, 888 F.2d 609, 612 n.3 [12 USPQ2d 1740] (9th Cir. 1989).

Plaintiffs have established a likelihood of confusion between the motorcycles counterfeited by South County and its own. South County Motorcycle, Inc., its officers, directors, employees, agents and all persons acting in concert with South County who have notice of this order are therefore, PERMANENTLY ENJOINED from

1. Manufacturing or assembling motorcycles, motorcycle related product or any other goods that bear any of Plaintiffs' trademarks or colorable imitations thereof without Plaintiffs' prior written authorization;
2. Distributing or selling motorcycles, motorcycle related products or any other goods that bear Harley-Davidson trademarks but did not originate with Plaintiffs or their licensees;
3. Using any Harley-Davidson trademark, or colorable imitation thereof, in any advertising, marketing or promotion, provided, however, that South County may use word marks (*e.g.* "Heritage" or "Softail") in a truthful, informational manner; and further provided that the mark is in the same type, color and size as the rest of the sentence or phrase in which it appears and that the mark is not featured in larger type than the size of the enjoined party's business name or is not otherwise given prominence in the advertising; and further provided that any use of a registered Harley-Davidson trademark is so denoted by the use of the ® symbol or the words "registered trademark;"
4. Using any Harley-Davidson trademark on or in connection with any goods not manufactured entirely by Harley-Davidson or one of its authorized licensees.

I. Attorneys Fees

When a defendant intentionally uses a counterfeit mark, the Court must, absent exceptional circumstances, award the plaintiff its reasonable attorneys fees. 15 U.S.C. § 1117(c). The phrase; "extenuating circumstances" is not defined in the statute, however, the exception is "extremely narrow." *Levi Strauss & Co. v. Shilon*, 121 F.3d 1309, 1314 [43 USPQ2d 1616] (9th Cir. 1997). South County provides no evidence of "extenuating circumstances" in this case. Accordingly, the Court GRANTS Plaintiffs' motion for reasonable attorneys fees, to be awarded subject to proof.

II. Conclusion

In sum, Plaintiffs' motion for summary judgment is GRANTED as to Plaintiffs' federal claims of trademark infringement and trademark counterfeiting, and state claim for trademark dilution. Plaintiffs' motion for summary judgment is DENIED as to Plaintiffs' claims for trade dress infringement and dilution. The Court AWARDS damages in the sum of $1,620,000 along with injunctive relief as set forth above. The Court also AWARDS Plaintiffs' their reasonable attorneys fees subject to proof.

III. Further Proceedings

The parties are ORDERED to appear before the Court on Monday, August 24 at 3:30 pm for a further status conference in this matter.

IT IS SO ORDERED.

U.S. Court of Appeals
Federal Circuit

Renishaw plc v. Marposs Societa' per Azioni

No. 98-1007

Decided September 16, 1998

PATENTS

1. Patent construction — Claims — Defining terms (§125.1305)

Interpretation to be given claim term can only be determined and confirmed with full understanding of what inventors actually invented and intended to envelop with claim, and construction that stays true to claim language and most naturally aligns with patent's description of invention will be, ultimately, correct construction; claim construction is persuasive, not because it follows certain rule, but because it defines terms in context of whole patent.

2. Patent construction — Specification and drawings — Defining terms (§125.1103)

Patent construction — Claims — Defining terms (§125.1305)

Claim for touch probe, which requires that probe generate trigger signal "when" probe's sensing tip contacts object and its stylus holder is thereby deflected relative to its housing, is limited to probe that generates trigger signal as soon as contact is made and deflection occurs, and does not read on device that does not generate trigger signal until appreciable time after contact is made and deflection begins, since language of claim shows that meaning of term "when" cannot be limited to precise moment of contact, but written description shows that invention of patent is directed to device that produces very accurate, very precise probe readings by maintaining tight control over position of stylus, and since, in context of invention, such readings can only be obtained if probe generates trigger signal immediately after contact.

Particular patents — General and mechanical — Measuring probes

5,491,904, McMurtry, touch probe, judgment of non-infringement of claim 2 affirmed.

Appeal from the U.S. District Court for the Eastern District of Michigan, Gadola, J.

Action by Renishaw plc against Marposs Societa' per Azioni and Marposs Corp. for patent infringement. From finding of non-infringement as to one claim of patent in suit at close of bench trial, plaintiff appeals. Affirmed.

Edward P. Walker and James A. Oliff, of Oliff & Berridge, Alexandria, Va.; James A. Samborn and Mark K. Riashi, of Dickinson, Wright, Moon, Van Dusen & Freeman, Detroit, Mich., for plaintiff-appellant.

Jeffrey M. Johnson, Charles W. Saber, James W. Brady Jr., and Laurence E. Fisher, of Dickstein, Shapiro, Morin & Oshinsky, Washington, D.C., for defendants-appellees.

Before Plager, Clevenger, and Gajarsa, circuit judges.

Clevenger, J.

This appeal requires us to determine whether the district court made errors of

claim construction that resulted in an erroneous finding of noninfringement at the close of a bench trial. *See Renishaw plc v. Marposs Societa' per Azioni*, 974 F. Supp. 1056 (E.D. Mich. 1997). At trial, Renishaw plc (Renishaw) asserted that four claims from three patents were infringed by the Mida product line of touch probes produced by Marposs Societa' per Azioni and Marposs Corporation (collectively Marposs). Renishaw appeals only the finding of noninfringement of claim 2 of its U.S. Patent No. 5,491,904 (the '904 patent). Because we conclude that the district court properly found one limitation of the claim not satisfied, we affirm.

I

The '904 patent, listing David McMurtry as its inventor, describes and claims an improved touch probe. Touch probes are used in the automated manufacturing and measurement field to check with extreme precision the dimensions of machined parts. A touch probe consists of a long, thin stylus that extends out from a housing and that can deflect in all directions. The probe, which is mounted on a movable arm of a machine, produces an electrical "trigger" signal when the stylus contacts a workpiece to be measured. A computer that controls the movement of the arm uses the trigger signal to calculate the dimensions or location of the workpiece. Although the stylus can be several inches long, a touch probe often exhibits accuracy on the order of one micron (one millionth of a meter) or less. This relatively small dimension must be kept in mind when discussing the attributes of touch probes. Figures 1 and 2 of the '904 patent show one embodiment of the patented touch probe in vertical and horizontal cross-section, respectively:

Fig. 1

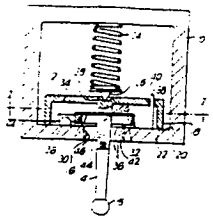
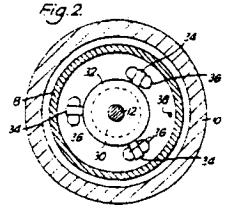


Fig. 2



In these figures, an inverted cup, or stylus holder **12**, carries a stylus **14** with a sensing tip **15** at its distal end. The stylus holder is located inside a housing **10** and has an annular skirt **18** that rests against a flat interior surface **20** of the housing. The annular skirt is pushed into tight contact with the housing by a biasing spring **24**. When the sensing tip hits an object, the stylus deflects and the stylus holder tilts inside the housing, rotating about a point on the annular skirt where the skirt contacts the housing. A light emitting diode **42** normally shines through an aperture **44** in the stylus to a pair of light detectors **46**. However, when the stylus deflects because of contact with an object, the aperture moves and the light beam is deflected. The light detectors sense the change and then send a signal to the computer that runs the machine. When the stylus moves back away from the object, the biasing spring pushes the stylus holder back down into full contact with the housing, and the light beam returns to the undeflected state.

With only the structure described above, the stylus holder is likely to slide around some in the housing so that the probe cannot deliver consistent performance. As a solution to this problem, the figures show the stylus poking through, and connected to, a planar spring **30** which is simply a sheet of flexible material and which is attached at its outer edge to a ring **32**. The ring serves as the connecting base for three cylinders **34** which in turn are seated between pairs of balls **36** fixed to the housing. This planar spring assembly, also known as a kinematic mount, can be analogized to a flag pole (*i.e.*, the stylus) stuck through a hole in the surface of a three-legged trampoline. The planar spring prevents the stylus holder from rotating (*i.e.*, about the Z axis) and keeps it from sliding back and forth inside the housing (*i.e.*, in the X and Y axes). When the stylus begins to deflect, the planar spring flexes slightly so that the kinematic mount can remain tightly engaged. With greater deflection, the cylinder on the side opposite the deflection eventually lifts out of its seat, much like a leg on the analogous trampoline would lift off the ground if the flag pole sticking through the flexible surface of the trampoline leaned over too far.

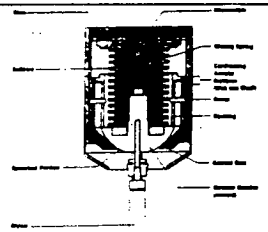
The embodiment just described purportedly solves two problems in the prior art: lobing and hysteresis. Lobing occurs when, because of the way the stylus holder is mounted in the housing, a greater amount of

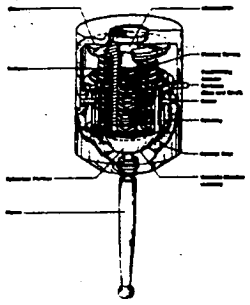
probe in some directions than in others. The pictured embodiment reduces lobing because the annular skirt results in equal deflection in every direction. Because the probe triggers upon relatively equal deflection in any direction, it can achieve micron-level accuracy by signaling soon after the stylus contacts a workpiece.

Hysteresis occurs when the stylus returns to a different position after each deflection (*i.e.*, the stylus does not center fully); it is caused primarily by friction between the probe components. The pictured embodiment reduces hysteresis because the biasing spring pushes the cylinders tightly into their seats between the balls, returning the stylus to the same rest position each time. The key issue on appeal is whether the *claimed* touch probe solves both these problems. Claim 2 recites (emphasis added):

> 2. A touch probe, for use on a movable arm of a position determining apparatus, the probe having a housing with an axis and a stylus holder located within the housing, the stylus holder carrying an elongate stylus which projects through an aperture in the housing, and which has a sensing tip at a free end thereof, *the probe generating a trigger signal when said sensing tip contacts an object and said stylus holder is thereby deflected relative to said housing*, the trigger signal being used by the position determining apparatus to take a reading of an instantaneous position of the movable arm, the touch probe comprising:
>
> biasing means for applying an axial biasing force to said stylus holder;
>
> a device acting between said stylus holder and said housing for constraining said stylus holder relative to the housing, the device including a seating and at least one constraining spring distinct from the biasing means, said seating including at least one pair of mutually engageable elements, each mutually engageable element having a surface inclined relative to the axis of the housing and providing lateral constraint from axial biasing;
>
> an annular member retained in a predetermined relationship with the stylus holder and having an annular surface facing in a direction of said aperture, said annular member being tiltable relative to the housing, and said stylus holder being tiltable with said annular member relative to said housing about a point on said annular surface; and
>
> a transducer for generating said trigger signal, said transducer being actuable by tilting of said stylus holder with said annular member about said point on said annular surface, wherein said tilting of said stylus holder relative to the housing is accommodated by flexing of said at least one constraining spring and said mutually engageable elements coming out of contact with each other.

Renishaw asserts infringement of claim 2 by Versions 4 and 5 from Marposs's Mida line of touch probes. The Version 5 probe is illustrated in vertical and oblique cross-section in plaintiff's exhibits below:





In the Mida probes, the stylus holder ("armset" in the diagram) has a spherical surface that rests in a conical seat in the housing and a central extension that rises toward a microswitch. The stylus holder also has an annular member ("disk" in the diagram), but unlike the annular skirt in the preferred embodiment of the '904 patent, it does not normally rest flat against the housing. Rather, it rests above a shelf built into the side of the housing and is separated from the shelf by a small gap. Thus, when the stylus contacts an object, the stylus holder does not immediately move upward toward the microswitch. Instead, it first rotates inside the conical seat (like a ball-and-socket joint). Once the annular disk hits the shelf, the stylus holder tips upward and its central extension hits the microswitch.[1]

[1] The Version 4 probes and the Version 5 probes differ only in the location of the biasing spring. On the Version 5 probes (pictured), the spring runs from the edge of the microswitch to the central extension of the stylus holder. On the

The annular ring cannot rest in flat contact with the shelf, and therefore, the spring can only force the stylus to return to a "neutral zone" rather than to a single precise rest position. As a result, the Mida probes are not designed to signal as soon as the stylus begins to move. Instead, they do not signal until the probe reaches the edge of the neutral zone. Because the size of the neutral zone is known, the location of the object being measured can be calculated. Thus, although the Mida probes do not eliminate hysteresis, they nonetheless provide precise readings.

Renishaw sued Marposs in July 1994, and a bench trial on infringement was held in March 1997. During the trial, Marposs presented no evidence regarding invalidity. At the close of the evidence, the district court took the case under advisement and requested proposed findings and post-trial briefs from both sides. In August 1997, the court found that none of Marposs's accused touch trigger probes infringed any of the asserted patent claims. Renishaw appeals the finding of noninfringement only with respect to claim 2 of the '904 patent. We have jurisdiction under 28 U.S.C. § 1295(a)(1) (1994).

II

An infringement analysis is a two-step process in which we first determine the correct claim scope, and then compare the properly construed claim to the accused device to determine whether all of the claim limitations are present either literally or by a substantial equivalent. *See General Mills, Inc. v. Hunt-Wesson, Inc.*, 103 F.3d 978, 981, 41 USPQ2d 1440, 1442 (Fed. Cir. 1997). We review the first step without deference to the trial court, *see Cybor Corp. v. FAS Techs., Inc.*, 138 F.3d 1448, 1455, 46 USPQ2d 1169, 1173 (Fed. Cir. 1998) (in banc), and the second step for clear error when infringement is tried to the bench, *see Young Dental Mfg. Co. v. Q3 Special Prods., Inc.*, 112 F.3d 1137, 1141, 42 USPQ2d 1589, 1592 (Fed. Cir. 1997).

On appeal, Renishaw asserts that the district court erred in construing three separate limitations in claim 2 and that those errors resulted in the court's erroneous finding of noninfringement. We address the claim requirement that the "probe generat[e] a trigger signal when said sensing tip contacts an object." Renishaw contends that the district court improperly read a limitation into this claim limitation from the '904 patent's written description.

Renishaw, of course, alludes to a familiar pair of claim construction canons: (a) one may not read a limitation into a claim from the written description, but (b) one may look to the written description to define a term already in a claim limitation, for a claim must be read in view of the specification of which it is a part. These two rules lay out the general relationship between the claims and the written description. *See Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996); *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979-80, 34 USPQ2d 1321, 1329-30 (Fed. Cir. 1995) (in banc), *aff'd*, 517 U.S. 370, 38 USPQ2d 1461 (1996). As rules at the core of claim construction methodology, they provide guideposts for a spectrum of claim construction problems.

Although no canon of construction is absolute in its application,[2] these two rules share two underlying propositions. First, it is manifest that a claim must explicitly recite a term in need of definition before a definition may enter the claim from the written description. This is so because the claims define the scope of the right to exclude; the claim construction inquiry, therefore, begins and ends in all cases with the actual words of the claim, *see AbTox, Inc. v. Exitron Corp.*, 122 F.3d 1019, 1023, 43 USPQ2d 1545, 1548 (Fed. Cir. 1997) ("[T]he language of the claim frames and ultimately resolves all issues of claim interpretation."); *Bell Communications Research, Inc. v. Vitalink Communications Corp.*, 55 F.3d 615, 619-20, 34 USPQ2d 1816, 1819 (Fed. Cir. 1995). The intrinsic evidence, and, in some cases, the extrinsic evidence, can shed light on the meaning of the terms recited in a claim,

Version 4 probes (not pictured), the spring's diameter is larger and the spring runs from the probe housing to the top of the annular ring.

[2] *See Modine Mfg. Co. v. United States Int'l Trade Comm'n*, 75 F.3d 1545, 1551, 37 USPQ2d 1609, 1612 (Fed. Cir. 1996) ("All rules of construction must be understood in terms of the factual situations that produced them, and applied in fidelity to their origins."); *Autogiro Co. of Am. v. United States*, 384 F.2d 391, 397, 155 USPQ 697, 702 (Ct. Cl. 1967) ("In utilizing all the patent documents, one should not sacrifice the value of these references by the unimaginative adherence to well-worn professional phrases." (internal quotation marks omitted)); *cf.* Karl N. Llewellyn, *Remarks on the Theory of Appellate Decision and the Rules or Canons About How Statutes Are to be Construed*, 3 Vand. L. Rev. 395, 401-06 (1950) (listing thrusts and parries of canons of construction of statutory provisions to illustrate their tenability).

either by confirming the ordinary meaning of the claim terms or by providing special meaning for claim terms. *See Vitronics*, 90 F.3d at 1583, 39 USPQ2d at 1577. However, the resulting claim interpretation must, in the end, accord with the words chosen by the patentee to stake out the boundary of the claimed property. *See Thermalloy, Inc. v. Aavid Eng'g, Inc.*, 121 F.3d 691, 693, 43 USPQ2d 1846, 1848 (Fed. Cir. 1997) ("[T]hroughout the interpretation process, the focus remains on the meaning of claim language.").

Thus, a party wishing to use statements in the written description to confine or otherwise affect a patent's scope must, at the very least, point to a term or terms in the claim with which to draw in those statements. Without any claim term that is susceptible of clarification by the written description, there is no legitimate way to narrow the property right. The Supreme Court has clearly stated the rationale for this requirement:

> [W]e know of no principle of law which would authorize us to read into a claim an element which is not present, for the purpose of making out a case of novelty or infringement. The difficulty is that if we once begin to include elements not mentioned in the claim in order to limit such claim . . ., we should never know where to stop.

McCarty v. Lehigh Valley R.R., 160 U.S. 110, 116 (1895). If we need not rely on a limitation to interpret what the patentee meant by a particular term or phrase in a claim, that limitation is "extraneous" and cannot constrain the claim. *See Hoganas AB v. Dresser Indus., Inc.*, 9 F.3d 948, 950, 28 USPQ2d 1936, 1938 (Fed. Cir. 1993) ("It is improper for a court to add 'extraneous' limitations to a claim, that is, limitations added wholly apart from any need to interpret what the patentee meant by particular words or phrases in the claim." (quoting *E.I. du Pont de Nemours & Co. v. Phillips Petroleum Co.*, 849 F.2d 1430, 1433, 7 USPQ2d 1129, 1131 (Fed. Cir. 1988)); *see also Specialty Composites v. Cabot Corp.*, 845 F.2d 981, 987, 6 USPQ2d 1601, 1605 (Fed. Cir. 1988) ("Where a specification does not *require* a limitation, that limitation should not be read from the specification into the claims." (citing *Lemelson v. United States*, 752 F.2d 1538, 1551-52, 224 USPQ 526, 534 (Fed. Cir. 1985)); *cf. Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1571, 7 USPQ2d 1057, 1065 (Fed. Cir. 1988) (holding that the written description provided "no evidence to indicate that [ ] limitations must be imported into the claims to [illegible]

The other clear point provided by these two canons covers the situation in which a patent applicant has elected to be a lexicographer by providing an explicit definition in the specification for a claim term. In such a case, the definition selected by the patent applicant controls. The patentee's lexicography must, of course, appear "with reasonable clarity, deliberateness, and precision" before it can affect the claim. *In re Paulsen*, 30 F.3d 1475, 1480, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994); *see Intellicall, Inc. v. Phonometrics, Inc.*, 952 F.2d 1384, 1388, 21 USPQ2d 1383, 1386 (Fed. Cir. 1992). If the patentee provides such a clear definition, the two canons require reference to the written description, because only there is the claim term defined as it is used by the patentee.[3] The law provides a patentee with this opportunity because the public may not be schooled in the terminology of the technical art or there may not be an extant term of singular meaning for the structure or concept that is being claimed. *See Lear Siegler, Inc. v. Aeroquip Corp.*, 733 F.2d 881, 889, 221 USPQ 1025, 1031 (Fed. Cir. 1984).

Absent a special and particular definition created by the patent applicant, terms in a claim are to be given their ordinary and accustomed meaning. *See York Prods., Inc. v. Central Tractor Farm & Family Ctr.*, 99 F.3d 1568, 1572, 40 USPQ2d 1619, 1622 (Fed. Cir. 1996) ("Without an express intent to impart a novel meaning to claim terms, an inventor's claim terms take on their ordinary meaning."); *Carroll Touch, Inc. v. Electro Mechanical Sys., Inc.*, 15 F.3d 1573, 1577, 27 USPQ2d 1836, 1840 (Fed. Cir. 1993). Thus, when a claim term is expressed in general descriptive words, we will not ordinarily limit the term to a numerical range that may appear in the written description or in other claims. *See Modine Mfg.*, 75 F.3d at 1551, 37 USPQ2d at 1612. Nor may we, in the broader situation, add a narrowing modifier before an otherwise general term that

[3] Likewise, any interpretation that is provided or disavowed in the prosecution history also shapes the claim scope. *See Loctite Corp. v. Ultraseal, Ltd.*, 781 F.2d 861, 867, 228 USPQ 90, 93-94 (Fed. Cir. 1985) (holding that although term was not limited by the specification, it was "expressly defined" in a narrow manner in the prosecution history); *see also CVI/Beta Ventures, Inc. v. Tura LP*, 112 F.3d 1146, 1158-59, 42 USPQ2d 1577, 1585-86 (Fed. Cir. 1997) (reviewing statements in the prosecution history in determining that claim term "elasticity" required total, not just partial, recovery from deformation); *Standard Oil Co. v. American Cyanamid Co.*,

stands unmodified in a claim. *See, e.g., Bell Communications*, 55 F.3d at 621-22, 34 USPQ2d at 1821 (faulting the district court for interpreting claim term "associating" to cover only explicit, and not implicit, association); *Specialty Composites*, 845 F.2d at 986-87, 6 USPQ2d at 1604 (refusing to limit the recited claim term "plasticizer" to external plasticizers where skilled artisans used the term broadly). For example, if an apparatus claim recites a general structure (*e.g.*, a noun) without limiting that structure to a specific subset of structures (*e.g.*, with an adjective), we will generally construe the claim to cover all known types of that structure that are supported by the patent disclosure. *See, e.g., Virginia Panel Corp. v. MAC Panel Co.*, 133 F.3d 860, 865-66, 45 USPQ2d 1225, 1229 (Fed. Cir. 1997) (claim term "reciprocating" is given its ordinary meaning and not limited to mere linear reciprocation); *Sjolund v. Musland*, 847 F.2d 1573, 1581-82, 6 USPQ2d 2020, 2027 (Fed. Cir. 1988) (refusing to limit claim term "baffle" to only rigid baffles and term "panel" to only panels of lattice construction).

However, a common meaning, such as one expressed in a relevant dictionary, that flies in the face of the patent disclosure is undeserving of fealty. As one of our predecessor courts stated in *Liebscher v. Boothroyd*, 258 F.2d 948 [119 USPQ 113] (CCPA 1958):

> Indiscriminate reliance on definitions found in dictionaries can often produce absurd results. . . . One need not arbitrarily pick and choose from the various accepted definitions of a word to decide which meaning was intended as the word is used in a given claim. The subject matter, the context, etc., will more often than not lead to the correct conclusion.

Id. at 951; *see Digital Biometrics, Inc. v. Identix, Inc.*, 149 F.3d 1335, _____, 47 USPQ2d 1418, 1426 (Fed. Cir. 1998); *see also Intel Corp. v. United States Int'l Trade Comm'n*, 946 F.2d 821, 836, 20 USPQ2d 1161, 1174 (Fed. Cir. 1991) (affirming construction of "permanent" as a relative term in light of the patent disclosure); *Ashland Oil, Inc. v. Delta Resins & Refractories, Inc.*, 776 F.2d 281, 298, 227 USPQ 657, 668 (Fed. Cir. 1985) (claim limitation requiring that a process be carried out "under substantially anhydrous conditions with the removal of water above 100°C" covered only *continuous* removal of water, because the written description stated that failure to remove water continuously would adversely affect the process). Thus, where there are several common meanings for a claim term, the patent disclosure serves to point away from the improper meanings and toward the proper meaning.

[1] Ultimately, the interpretation to be given a term can only be determined and confirmed with a full understanding of what the inventors actually invented and intended to envelop with the claim. *See Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 389, 38 USPQ2d 1461, 1470 (1996). The construction that stays true to the claim language and most naturally aligns with the patent's description of the invention will be, in the end, the correct construction. *See Young Dental*, 112 F.3d at 1142, 42 USPQ2d at 1593 (affirming the district court's claim construction as "a more natural reading of the claim language" than the appellant's construction); *cf.* Llewellyn, *supra* note 2, at 401 ("Plainly, to make any canon take hold in a particular instance, the construction contended for must be sold, essentially, by means other than the use of the canon: The good sense of the situation and a *simple* construction of the available language to achieve that sense, *by tenable means, out of the statutory language*."). A claim construction is persuasive, not because it follows a certain rule, but because it defines terms in the context of the whole patent.

Following these principles, we turn to the parties' arguments.

III

The main dispute concerns the requirement that "the probe generat[e] a trigger signal when said sensing tip contacts an object and said stylus holder is thereby deflected relative to said housing." The district court determined that "when" is defined by reference to this entire claim limitation, such that "when" means as soon as contact is made and deflection occurs. *See Renishaw*, 974 F. Supp. at 1089. On appeal, Renishaw argues that "when" should receive one of its broader dictionary definitions: "at or after the time that," "in the event that," or "on condition that," so that the claim would read on a device that does not generate a trigger signal until an appreciable amount of time after contact is made and deflection begins. Because infringement of this limitation depends on the meaning of the word "when," we refer to it in the remainder of the opinion as the "when" limitation. We agree with the district court's construction of this claim limitation and, because all limitations must be met for there to be infringement, we need consider only this limitation.

The ultimate issue is the manner in which "when" defines the timing of probe trigger-

ing vis-á-vis contact of a stylus with a workpiece. The issue brings into sharp focus the convergence of the two canons of claim construction discussed above. According to Renishaw, the accused probes escape infringement only if a narrowing limitation is read into "when" from the written description. Marposs counters with an argument that the claim is properly construed to require a finding of noninfringement because the correct meaning of the claim term "when" is embedded throughout the specification.

Neither party forwards a technical meaning for "when" in the applicable industry. However, there are several closely-related, but distinct, common meanings for "when," most cited by Renishaw on appeal. These include: at or during the time that; just at the moment that; at any or every time that; at, during, or after the time that.[4] Renishaw asserts that nothing in claim 2 places an outer endpoint on the time at which a trigger signal must be generated, other than that the device be capable of generating some trigger signal. Therefore, contends Renishaw, the trial court's definition of the term was overly narrow, and the claim is properly defined simply as "at or after the time that." For its part, Marposs argues that the '904 patent's written description exhibits a clear intent to provide triggering as soon as possible after contact with a workpiece, not at appreciable times after contact. Marposs argues that in claim 2 the use of "when" provides an entry point into the claim for that intent.

[2] The explicit language of claim 2 is our starting point. There, the claim states that a signal is generated "when" there is contact with a workpiece "and said stylus holder is thereby deflected." The claim ties the signal to contact and deflection, thus showing that the trigger signal cannot occur until the probe has contacted the workpiece *and* the stylus has deflected some amount. In other words, contact and deflection are a condition precedent to signaling. Thus, the claim itself precludes us from viewing "when" as requiring signaling at the precise moment of contact, for some deflection must occur before signaling. The district court also recognized this. *See Renishaw*, 974 F. Supp. at 1071; *see also Mantech Envtl. Corp. v. Hudson Envtl. Servs., Inc.*, No. 98-1079, slip op. at 12-13 [47 USPQ2d 1732] (Fed. Cir. Aug. 13, 1998) (looking to other terms in a claim to construe a limitation in dispute); *Phonometrics, Inc. v. Northern Telecom Inc.*, 133 F.3d 1459, 1465, 45 USPQ2d 1421, 1426 (Fed. Cir. 1998) (same).

Mere recognition that "when" is not limited to the precise moment of contact, however, does not make the term clear, or mandate a meaning of "when" to include any time after contact as long as a measurement is derived from stylus contact. That is because "when" is not a broad and general term when standing in isolation. Instead, it has several meanings, each of which may prevail based on the context. Here, we have bounteous context. Claim 2 does not exist in rarefied air, but rather is surrounded by a patent disclosure of singular purpose. As evidenced by the several common meanings of "when," the term is imprecise as used in the '904 patent. The term is not ambiguous, however, because the written description provides overwhelming evidence to guide a proper interpretation of the term. *See Vitronics*, 90 F.3d at 1583, 39 USPQ2d at 1577. Replete with references that indicate that the patentee was preeminently concerned with generating a trigger signal as soon as possible after contact, the written description lends precision to the term "when." The written description shows that the patentee's invention is directed at a machine that produces very accurate, very precise probe readings by maintaining tight control over the position of the stylus. In the context of the invention, such readings can only be obtained if the probe triggers very, very soon after contact.

For example, in describing the invention's place within the prior art, the '904 patent notes: "When the stylus contacts a workpiece surface, a trigger signal is generated by the probe, which is used to trigger the taking of a reading of the instantaneous position of the movable spindle, quill or arm." Col. 1, ll. 36-42. Likewise, the Summary of the Invention states that the preferred embodiment of the probe "includes means for providing a signal when said stylus contacts a workpiece," col. 3, ll. 28-29, and that the movable elements are displaced "out of said rest position when said stylus contacts a workpiece," col. 3, ll. 21-22.

Statements in the "Description of Preferred Embodiments" also use the term "when" to describe a time very close to the precise instant that the stylus contacts the object to be measured and not some appreciable time thereafter:

> When the stylus **14** contacts a workpiece, from any direction, the stylus is deflected. For example, if the contact is in a horizontal direction, the stylus **14** tilts.

[4] These definitions are taken from *Webster's Ninth New Collegiate Dictionary* 1342 (1985); *Webster's Third New International Dictionary* 2602 (1993); and the *Chambers Concise Dictionary* 1223 (1992).

faces **20** and **22**. At this time, the cylinders **34** and balls **36** remain engaged with each other, and the tilting is accommodated by flexing of the planar spring **30**. . . .

. . . .

When the deflecting force on the stylus **14** ceases (*i.e.* when the probe is moved so that the stylus **14** no longer contacts the workpiece) the stylus member **12** is returned to its axial and lateral rest position by the action of the spring **24**.

Col. 4, l. 52 to col. 5, l. 7. This passage refers to "when" as "at this time," *i.e.*, when the planar spring is flexing and the cylinders, or analogously, the legs of the trampoline, have not yet lifted out of their moorings. In other passages, the written description states: "The *instant at which* the stylus tip **15** *first contacts* a workpiece can be detected in various possible ways," col. 6, ll. 10-11, that the photoelectric sensor is responsive to motion caused "when the stylus **14** *begins* to deflect upon contact with a workpiece," col. 6, ll. 33-34, "when the stylus **14** is deflected by contact with a workpiece, the cage **86** *initially* remains stationary in its kinematic rest position," col. 8, ll. 60-63, "[a]ll of the embodiments of FIGS. 4-10 may have any of the arrangements for detecting the *instant of contact* between the stylus tip and a workpiece," col. 9, ll. 16-20, and:

> In operation, when the stylus **14** is deflected by contact with a workpiece, *at first* the skirt **72** and cage **64** lift or tilt bodily from the surfaces **74**. . . . Also for the same reason, when eventually the stylus returns to its rest position, there is little or no hysteresis in its rest position.
>
> However, the above bodily lifting or tilting of the cage **64** *upon deflection* of the stylus *only lasts for a very small amount of stylus deflection.*

Col. 8, ll. 11-13 (emphasis added to all quotations). These passages make abundantly clear that "when" in the patent means at the time of, and not some appreciable time thereafter. *See Autogiro Co.*, 384 F.2d at 397, 155 USPQ at 702-03 ("[W]ords must be used in the same way in both the claims and the specification.").

To the extent that these passages refer to the preferred embodiment, they cannot be read into the claims without some hook. The claim term "when" is that hook. Each of the passages above show that the patentee wanted "when" to mean as soon as possible after contact. In contrast, Renishaw's proferred construction of "when," which would sweep in any time whatsoever after contact, is so broad that it would require us to ignore the abounding statements in the written description that point decidedly the other

Renishaw might have us save its claim by placing a functional limitation on the claim such that "when" would permit signaling at any time after contact but no longer than would permit accurate measurement of the workpiece. However, this limitation appears nowhere in the claims; rather, it comes from a concept of operability. To the extent Renishaw must refer to the written description, the patentee's extremely detailed account of his invention in that written description shows that his aim was to generate a signal as soon as possible after contact, not to generate a signal at appreciable times after contact. Any delay in signaling with Renishaw's probes creates an unrecoverable error, because they must equate the position of the probe at the moment of signaling with the position of the workpiece. Therefore, delay in signaling while the probe continues to move creates an error. The patentee strove to eliminate this error, and the entire patent document exhibits his intent to make the delay between contact and signaling as small as possible.

Our construction of "when" matches that of the district court. Although the district court initially construed "when" to mean "at the time that," it recognized that its choice of words could be read out of context to require immediate signaling, a physical impossibility. The district court therefore clarified its construction as follows:

> While it is of course true that the laws of nature dictate that no detection device can be "absolutely instantaneous," the claims, specifications, figures, and Mr. McMurtry's testimony confirm that the patented probes signal as soon as possible when the stylus tip contacts the workpiece. The quicker the Renishaw probes trigger, the better their performance. In short, the patents teach the quickest signaling possible, and there is no suggestion otherwise. In fact, Mr. McMurtry stated that he taught good probes with quick signals, "wouldn't do anything but that, but to teach the best."

Renishaw, 974 F. Supp. at 1071. Consistent with this understanding and with the understanding that the claimed probes operate at a micron-level scale, we hold that claim 2 covers probes which signal within a nonappreciable period of time after contact such that the delay in signaling is insignificant when compared to the sensitivity and accuracy of the probe.

IV

The operation of the Marposs Mida

appreciable amount of movement of the stylus which is well after the contact with the workpiece and initial deflection. In fact, this appreciable delay is part of the design of the Mida probes and ensures that they can operate properly without centering fully. The same delay that creates unrecoverable error in the probes disclosed in the '904 patent is necessary to provide accuracy in the Mida probes. The Mida probes can still measure precisely, but they do so by taking advantage of designed-in delay. There is thus no clear error in the court's finding that the Mida probes do not literally infringe the "when" limitation.

Renishaw hints in its submissions on appeal that Marposs's probes at least infringe by equivalents. However, Renishaw's citations to the record indicate only that the issue of *literal* infringement was raised at trial. Thus, there is no need to remand to the district court. We therefore affirm.

AFFIRMED.

Ohio Supreme Court

Ohio v. Perry

No. 97-628

Decided August 19, 1998

COPYRIGHTS

1. Elements of copyright — Federal pre-emption — Statutory pre-emption (§205.0803)

Infringement pleading and practice — Criminal actions (§217.09)

Prosecution of state law criminal charges of unauthorized use, based solely upon unauthorized uploading, downloading, and posting of computer software on computer bulletin board, is preempted by federal copyright laws, since uploading and downloading of software constitute unauthorized copying, since unauthorized posting of software on bulletin board is unauthorized distribution, and may be viewed as facilitating unauthorized copying and implicating display rights of copyright owners, since foregoing uses are all governed by copyright laws, and since activities proved by state in present case therefore constitute uses that are not qualita-

2. Elements of copyright — Federal pre-emption — Statutory pre-emption (§205.0803)

Infringement pleading and practice — Criminal actions (§217.09)

State law criminal charges of unauthorized use based upon unauthorized uploading, downloading, and posting of computer software on computer bulletin board do not include violation of license agreement as "extra element" that renders charges quantitatively different from charges of copyright infringement, since there is no reference to any license or licensing agreement in record, since criminal defendant's entry of no contest plea does not establish, as admitted fact, that license agreement existed, and since charges against defendant reflect theory that he did not purchase software in question, and therefore any licensing terms that did exist would not apply to him.

3. Elements of copyright — Federal pre-emption — Statutory pre-emption (§205.0803)

Infringement pleading and practice — Criminal actions (§217.09)

State law criminal charge based on unauthorized use of computer software to run computer bulletin board is preempted by federal copyright law, even though using software for its intended purpose is use different from reproduction, distribution, or display, since charge is not based on allegation that defendant used someone else's tangible copy of software, in form of disk or CD-ROM, without authorization, since only "property" at issue in present case that has owner and therefore could fulfill elements of unauthorized use is property right in actual program conferred by copyright law, and since 17 USC 301(a) expressly preempts any state law actions which govern "legal or equitable rights that are equivalent to any of the exclusive rights within the general scope of copyright."

Appeal from the Ohio Court of Appeals, Hamilton County; 41 USPQ2d 1989.

Criminal action brought by the State of Ohio against Michael Perry for theft, unauthorized use of property, and possession of criminal tools. Defendant moved to dismiss on ground that prosecution was preempted by federal Copyright Act. After that motion was overruled, defendant pleaded no contest

Court of Appeals, Federal Circuit

In re Grabiak

No. 84-1718

Decided Aug. 9, 1985

PATENTS

1. Patentability — Invention — Specific cases — Chemical (§51.5093)

Absent reference which shows, or suggests to one of ordinary skill in art, substitution of sulfur atom instead of particular oxygen in herbicidal safener compound, support is lacking that such modification would be *prima facie* obvious.

2. Patentability — Invention — Specific cases — Chemical (§51.5093)

Obviousness of modification in herbicidal safener compound was not established, absent evidence that modified segment was not significant to compound's claimed safening properties, or that safening properties of claimed compound were predictable from prior art.

Particular patents — Herbicides

Grabiak, et al., 2-Chloro-4-Trifluoromethyl Thiazolecarbothioic Acids Useful As Herbicidal Safeners, rejection of claims 1-34 reversed.

Appeal from Patent and Trademark Office Board of Appeals.

Application for patent of Raymond C. Grabiak, et al., Serial No. 168,959, filed July 17, 1980. From decision sustaining rejection of claims 1-34, applicants appeal. Affirmed.

J. Timothy Keane, St. Louis, Mo., for appellants.

Fred W. Sherling (Joseph F. Nakamura, Solicitor, and John W. Dewhirst and Harris A. Pitlick, Associate Solicitors, on the brief) for Patent Office.

Before Friedman, Nies, and Newman, Circuit Judges.

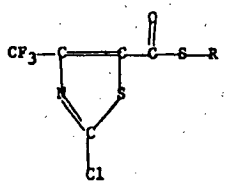
Newman, Circuit Judge.

Raymond C. Grabiak *et al.* appeal from the decision of the Patent and Trademark Office Board of Appeals sustaining the rejection of claims 1 through 34, all of the claims of patent application Serial No. 168,959, filed July 17, 1980 for "2-Chloro-4-Trifluoromethyl Thiazolecarbothioic Acids Useful As Herbicidal Safeners," as unpatentable under 35 U.S.C. §103. We conclude that the PTO has not presented a *prima facie* cause of unpatentability, and on this basis we reverse the decision of the Board.

The Invention

The claimed invention relates to a class of chemical compounds having utility as herbicidal safeners. Safeners, sometimes called antidotes, are used to protect growing crops from damage that may be caused by the application of herbicides to control undesired plants. The claimed compounds, useful as safeners against acetanilide herbicides, are certain thiazole thiocarboxylates as shown in Claim 1, the broadest claim:

1. A compound of the formula

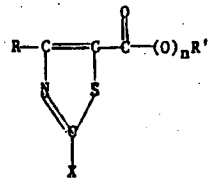


wherein R is C_1-$_3$alkyl, phenyl or benzyl. Other claims are directed to various species, to herbicidal mixtures containing these compounds, and to various methods of use of these compounds. Grabiak has not argued the claims separately, and we do not so consider them.

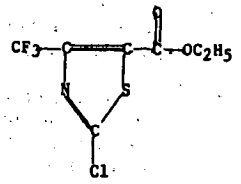
The Rejection

The claims stand rejected as obvious from Howe et al. U.S. Patent No. 4,199,506. Also relied on are Bollinger U.S. Patent No. 4,317,310 and R. Conant & A. Blatt, *The Chemistry of Organic Compounds* 342-43 (3d ed. 1947), an organic chemistry textbook.

Howe describes a family of chemical compounds having utility as safeners for acetanilide herbicides, consisting of thiazole carboxylic and thiazole carboxamide compounds of the general formula:

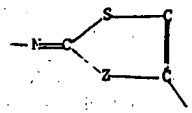


In the Howe disclosure R, R', n, and X, are broadly defined, the breadth of which is not pertinent to this issue. Very pertinent is the disclosure in Howe of the following specific compound:



This compound differs from those claimed by grabiak only by the presence in Grabiak of a sulfur atom instead of a particular oxygen atom in the ester moiety, a difference which the examiner asserted would have been, without more, obvious.

The examiner cited the Bollinger reference as showing the interchangeability of oxygen and sulfur in compounds having safening properties. Bollinger shows, as safeners for thiocarbamate and acetanilide herbicides, a class of 2-imino derivatives of 1,3-oxathioles and 1,3-dithioles. The examiner pointed to the 1,3-oxathiole/dithiole ring fragment:



wherein Z is defined as either oxygen or sulfur, as support for the conclusion that it would have been obvious to exchange a sulfur atom for an oxygen atom in the Howe compounds. The Board agreed.

On reconsideration, the Board in a split decision affirmed the rejection, citing *In re Fancher*, 410 F.2d 813, 161 USPQ 613 (CCPA 1969) and *In re Albrecht*, 579 F.2d 92, 198 USPQ 208 (CCPA 1978) for the proposition that oxygen and sulfur are well known to be interchangeable. To "reiterate that the close analogy between sulfur and oxygen isologs is well known," the Board referred to Conant & Blatt's discussion of the general similarities between simple sulfur and oxygen compounds. One member of the Board dissented, stating his belief that the compounds disclosed in Bollinger are "too remote to those claimed" to suggest substitution of sulfur for oxygen at a particular place in the Howe compounds.

The Argument

Grabiak presented no evidence that his safener compounds have unobvious properties as compared with Howe's safener compounds, and stated plainly that they do not. Grabiak's argument is, in sum, that (1) in the field of biological activity, it is not predictable whether chemical compounds that have an apparent structural similarity will also have similar biological properties; (2) biological properties cannot be predicted; they must be determined by experimentation; (3) therefore mere structural similarity is inadequate to present a *prima facie* case of obviousness; and (4) more is required, such as suggestion in the prior art (a) that the structural modification should be made and (b) that the modified compound will exhibit the biological behavior of the prior art compound.

Grabiak argues that Howe does not teach that one of the oxygens in the Howe carboxylate group could be replaced with sulfur to produce safeners for acetanilide herbicides, and that Bollinger and Conant & Blatt do not cure this deficiency because Bollinger is dealing with a quite different part of a quite different molecule, and the Conant & Blatt text refers only to simple structures and chemical, not biological, properties; and in any event that safening activity is, like all biological behavior, unpredictable. Grabiak asserts that the teachings of Howe with Bollinger and Conant & Blatt are insufficient to establish *prima facie* obviousness, in that there is no motive in the cited art to make the modification required to arrive at appellants' compounds.

Analysis

I.

When chemical compounds have "very close" structural similarities and similar utilities, without more a *prima facie* case may be made. See for example In re Wilder, 563 F.2d 457, 195 USPQ 426 (CCPA 1977) (adjacent homologues and structural isomers); *In re May*, 574 F.2d 1082, 197 USPQ 601 (CCPA 1978) (steroisomers); In re Hoch, 428 F.2d 1341, 166 USPQ 406 (CCPA 1970) (acid and ethyl ester). When such "close" structural similarity to prior art compounds is shown, in accordance with these precedents the burden of coming forward shifts to the applicant, and evidence affirmatively supporting unobviousness is required.

Analysis of those circumstances in which a *prima facie* case has or has not been made in view of the degree of structural similarity or dissimilarity, or the presence or absence of

similar utility between the prior art compound and that of the applicant, has inspired generations of applicants, courts, and scholars. Upon review of this history, we have concluded that generalization should be avoided insofar as specific chemical structures are alleged to be *prima facie* obvious one from the other. Although we do not accept Grabiak's argument that when biological activity is involved there can be no presumption (i.e. no *prima facie* case) of obviousness, in the case before us there must be adequate support in the prior art for the ester/thioester change in structure, in order to complete the PTO's *prima facie* case and shift the burden of going forward to the applicant.

[1] The Bollinger teaching of various heterocyclic rings containing either two sulfur atoms or one oxygen and one sulfur atom, rings which are unlike any part of the Howe molecule, does not suggest the interchangeability of sulfur for oxygen in the ester moiety of the Howe molecule. (Grabiak also analyzes the Bollinger disclosure as showing "dramatic decreases in safener activity when replacing oxygen with sulfur".) Conant & Blatt's brief discussion that "simple sulfur compounds" have properties similar to simple oxygen compounds does not purport to apply to complex organic molecules. Nor do the *Fancher* and *Albrecht* cases remedy these deficiencies, for in each of those cases the sulfur/oxygen interchange was in a heterocyclic ring common to both the prior art compounds and the applicant's compounds.

We repeat the statement of *In re Bergel*, 292 F.2d 955, 956-57, 130 USPQ 206, 208 (CCPA 1961), that:

> The mere fact that it is *possible* to find two isolated disclosures which might be combined in such a way to produce a new compound does not necessarily render such production obvious unless the art also contains something to suggest the desirability of the proposed combination. [Emphasis in orginal]

The PTO cited no pertinent reference showing or suggesting to one of ordinary skill in the art the change of a thioester for an ester group. In the absence of such reference, there is inadequte support for the PTO's position that this modification would *prima facie* have been obvious.

II.

The Solicitor contends that the sulfur in Grabiak that replaced the oxygen in Howe occurs in a portion of the molecule that is not significant to safener activity, as further argument that Grabiak's compounds would have been obvious from Howe's compounds. To support this argument the Solicitor refers to the statement in Howe that the carboxylic moiety may include the acid and salts thereof, acid chlorides, amides, and esters. From this the Solicitor argues that the nature of this moiety "would not be expected to impart or contribute to the safening utility", and therefore that the replacement of Howe's ester with Grabiak's thiosester would have been obvious.

[2] This argument is lacking in a critical element: adequate support in the prior art. Howe does not state that the carboxylic segment of his molecule is not significant to its biological properties, and no other support is invoked. We appreciate that the PTO lacks the possibility of experimental verification of this theory; but absent an initial *prima facie* case, we do not think the burden of disproving this theory is shifted to Grabiak. Nor do we judicially accept a theory that appears to require the general assumption that sulfur is not significant to biological behavior.

Grabiak argues further that the PTO's position that the identity of the carboxylic component is not material cannot apply here because safening activity can not be predicted from chemical structure. Grabiak asserts that the efficacy of any compound for safening depends on variables including the type of herbicide compound, the type of weed to be controlled, the type of crop to be protected and the safener compound itself. Grabiak cites data from Howe which he states show that a "compound, which safens one herbicide used to control barnyard grass in the presence of corn crop, is totally ineffective to safen that same herbicide to control barnyard grass in the presence of rice." Grabiak also cites data from Bollinger to support Grabiak's position that "safening activity even for closely similar homologues does not vary predictably."

In response, the Solicitor argues that it is not "necessarily true" that safening activity is not predictable from the structure of the compound. Evidence for this statement is seen by the Solicitor in Grabiak's compounds themselves, which are admitted to have the same safening activity as those of Howe. However, Grabiak's disclosure may not be used to fill the gaps in the prior art. If evidence of similar biological properties between -C(O)OR and -C(O)SR groups is to be relied upon, it must come from the prior art. The PTO produced no such evidence. Instead, the Board held that "it is not inconceivable to substitute [sulfur for oxygen] to obtain compounds having the same expected properties." We agree that it is not inconceivable. The standard, however, is whether it would have been obvious in terms of section 103.

In the absence of adequate support, we conclude that this argument does not perfect the PTO's *prima facie* case.

III.

We have considered the decisions on which the PTO relies. In *In re Payne*, 606 F.2d 303, 203 USPQ 245 (CCPA 1979) there was prior art well supporting the PTO's *prima facie* case. In *In re Susi*, 440 F.2d 442, 169 USPQ 423 (CCPA 1971) the difference from the prior art compound was a hydroxyl group, a difference that the applicant conceded was "of little importance." In *In re Doebel*, 461 F.2d 823, 174 USPQ 158 (CCPA 1972), the court stated that "the claimed compound is a homologue," and a *prima facie* case was held to have been made. None of these cases requires the result that a thioester derivative be deemed *prima facie* obvious from the corresponding ester in the absence of prior art on this point.

Conclusion

On the record before us, we conclude that the PTO did not establish a *prima facie* case of obviousness, and thus did not shift to Grabiak the burden of coming forward with evidence of unexpected results.

REVERSED

Court of Appeals, Federal Circuit

Rhone-Poulenc Specialties Chimiques, et al. v. SCM Corporation

No. 84-1557

Decided Aug. 6, 1985

PATENTS

1. Arbitration (§16.)

Determinations as to scope, and infringement of, patent are central to licensing agreement in which payment of royalties depended completely upon whether licensee operated within or outside scope of patent's claim, and thus such determination must be included within scope of agreement's broad arbitration clause.

2. Arbitration (§16.)

Licensee which did not answer complaint but rather filed motion for stay pending arbitration has not waived its right to arbitrate merely by waiting until after licensor filed suit before requesting arbitration.

Appeal from District Court for the Middle District of Florida; Melton, J.

Action by Rhone-Poulenc Specialties Chimiques and Rhone-Poulenc, Inc., against SCM Corporation, for patent infringement, breach of contract and misappropriation of trade secrets. From denial of defendant's motion for stay, defendant appeals. Vacated and remanded.

Hal D. Cooper and Jones, Day, Reavis & Pogue, both of Cleveland, Ohio (Kenneth R. Adamo and Samual Friedman, Both of New York, N.Y., and Steven A. Werber and Commander, Legler, Werber, Dawes & Sadler, both of Jacksonville, Fla., of counsel) for appellant.

Norman H. Stepno and Burns, Doane, Swecker & Mathis, both of Alexandria, Va. (Ronald L. Grudziecki and Eric H. Weisblatt, both of Alexandria, Va., on the brief, and George L. Hudspeth, Thomas F. Harkins, Jr. and Mahoney, Hadlow & Adams, all of Jacksonville, Fla., and Vincent E. DeFelice, Monmouth Junction, New Jersey, of counsel) for appellee.

Before Rich, Baldwin and Kashiwa, Circuit Judges.

Rich, Circuit Judge.

This appeal is from the July 20, 1984, Order of the U.S. District Court for the Middle District of Florida, Jacksonville Division, denying the motion of SCM Corporation (SCM) for stay of proceedings pending arbitration pursuant to 9 U.S.C. § 3. We vacate and remand.

Background

On January 1, 1979, Rhone-Poulenc Specialites Chimiques, a French corporation, and Rhone-Poulenc Inc. (Rhone or RPI) entered into an exclusive license agreement (agreement) with SCM, whereby SCM was granted the exclusive right to practice a chemical process for the isomerization of linalol to make a "geraniol product," comprising geraniol and nerol, using vanadium, a transition metal, as a catalyst according to claim 2 of U.S. patent No. 3,925,485 ('485), and to sell the geraniol product. The agreement provides